

**REDACTED**



## Tetra Tech EM Inc.

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September 28, 2001

Mr. Charles King  
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U.S. Environmental Protection Agency, Region 4  
61 Forsyth Street, SW 11th Floor  
Atlanta, Georgia 30303

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**OCT 1 - 2001**

**EPA-REGION 4  
ATLANTA, GA**

**Subject: Final Expanded Site Inspection Report  
Latex Construction Company  
EPA Contract No. 68-W-00-120  
EPA ID No. GAD980803696  
Technical Direction Document No. 4T-01-10-A-006**

Dear Mr. King:

The Tetra Tech EM Inc. Superfund Technical Assessment and Response Team (START) is submitting one copy of the final expanded site inspection (ESI) report for the Jordan Sign Company in Savannah, Chatham County, Georgia. Per your correspondence on September 20, 2001, EPA Region 4 has reviewed the draft ESI report dated August 27, 2001, and has no comments on the draft ESI report. Due to your acceptance of the draft ESI report, Tetra Tech EM Inc., is submitting only the cover page for the final report.

If you have any questions or comments regarding this submittal, please contact me at (678) 775-3089.

Sincerely,

Franki J. Jewell  
START Project Manager

Enclosure

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Cindy Gurley, EPA Process Owner (w/o enclosures)  
Steve Pierce, START Leader (w/o enclosures)  
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START File

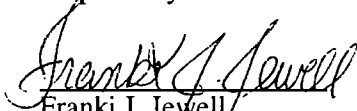
**FINAL EXPANDED SITE INSPECTION REPORT**  
**LATEX CONSTRUCTION COMPANY**  
**THUNDERBOLT, CHATHAM COUNTY, GEORGIA**  
**US EPA ID NO. GAD980803696**

**Revision 1**

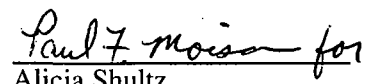
**Prepared for**  
**U.S. ENVIRONMENTAL PROTECTION AGENCY**  
**Region 4**  
**Atlanta, Georgia 30303**

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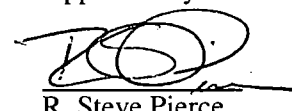
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## 1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked the Tetra Tech EM Inc. (TtEMI) Superfund Technical Assessment and Response Team (START) to conduct an expanded site inspection (ESI) at the Latex Construction Company site (the site), EPA ID No. GAD980803696, under Contract No. 68-W-0021, Technical Direction Document (TDD) No. 04-9902-0004. The ESI was completed under Contract No. 68-W-00-120, TDD No. 4T-01-10-A-006.

The primary objective of an ESI is to determine whether a site has the potential to be placed on the National Priorities List (NPL). The NPL identifies sites at which a release, or threatened release, of hazardous substances poses a serious enough risk to public health or the environment to warrant further investigation and possible remediation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act of 1986.

Information gathered during the ESI is used to generate a preliminary Hazard Ranking System (HRS) score. The HRS score is the primary criterion EPA uses to determine whether a facility should be placed on the NPL. ESIs are generally conducted at sites where additional environmental sampling or monitoring well installation is necessary to fulfill HRS documentation requirements. ESIs are also conducted to address issues not adequately resolved in previous investigations.

Specifically, the objectives of the ESI are as follows:

- Obtain and review relevant file material
- Collect samples to attribute hazardous substances to site operations
- Collect samples to establish representative background levels
- Evaluate target populations for the groundwater migration, surface water migration, soil exposure, and air migration pathways
- Collect any other missing HRS data
- Document current facility conditions
- Develop a site layout map

This report documents the results of the ESI conducted at the site during the weeks of March 26 and April 2, 2001. Information reviewed for the ESI was gathered from EPA Region 4 CERCLA files and from the Georgia Department of Natural Resources (GDNR).

## **2.0 SITE BACKGROUND**

This section describes the mine; its current and past operations, including waste disposal practices and regulatory history; previous investigations; and the potential source areas located at the site.

### **2.1 SITE DESCRIPTION**

The Latex Construction Company (Latex), is a 27-acre former ship building and repair facility located adjacent to the Wilmington River at 3126 River Road in Thunderbolt, Chatham County, Georgia (See Figure 1) (Refs. 1; 2). The facility is owned by Thunderbolt Marine, Inc (TMI) which presently leases the property to Palmer Johnson Savannah, Inc. Palmer Johnson Savannah, Inc. refurbishes luxury yachts (Refs. 3; 10).

The facility is located in the southernmost portion of Thunderbolt in a small industrial area surrounded by residential neighborhoods (Ref. 1). The facility consists of five areas as follows: the TMI marina, the north yard (approximately 7 acres), the west storage area (approximately 5 acres), the ship basin (approximately 7 acres), which is adjacent and connected to the Wilmington River, and the south yard (approximately 8 acres) (Refs 1; 2). The site layout is shown on Figure 2. During the ESI sampling investigation, TtEMI personnel observed that the facility is fenced and guarded by security personnel, thereby restricting access. The facility is bordered by River Road (also called Falligant Avenue) to the north, the Wilmington River to the east, Sylvan Island Road to the west, and Williamson Creek and an extensive salt marsh to the south (See Figure 2) (Refs. 1; 2). Both Williamson Creek and the Wilmington River are tidally influenced (Refs. 4; 5, p. 5).

The climate in Chatham County is warm and moist with an average annual temperature of about 66° F (Ref. 6, p. 64). The 2-year 24-hour rainfall for the area is 5 inches (Ref. 7). The mean annual precipitation for the area is 48 inches, and the mean annual lake evaporation is 44 inches, yielding a net annual precipitation of 4 inches (Ref. 8).



SCALE  
1" = 24,000'



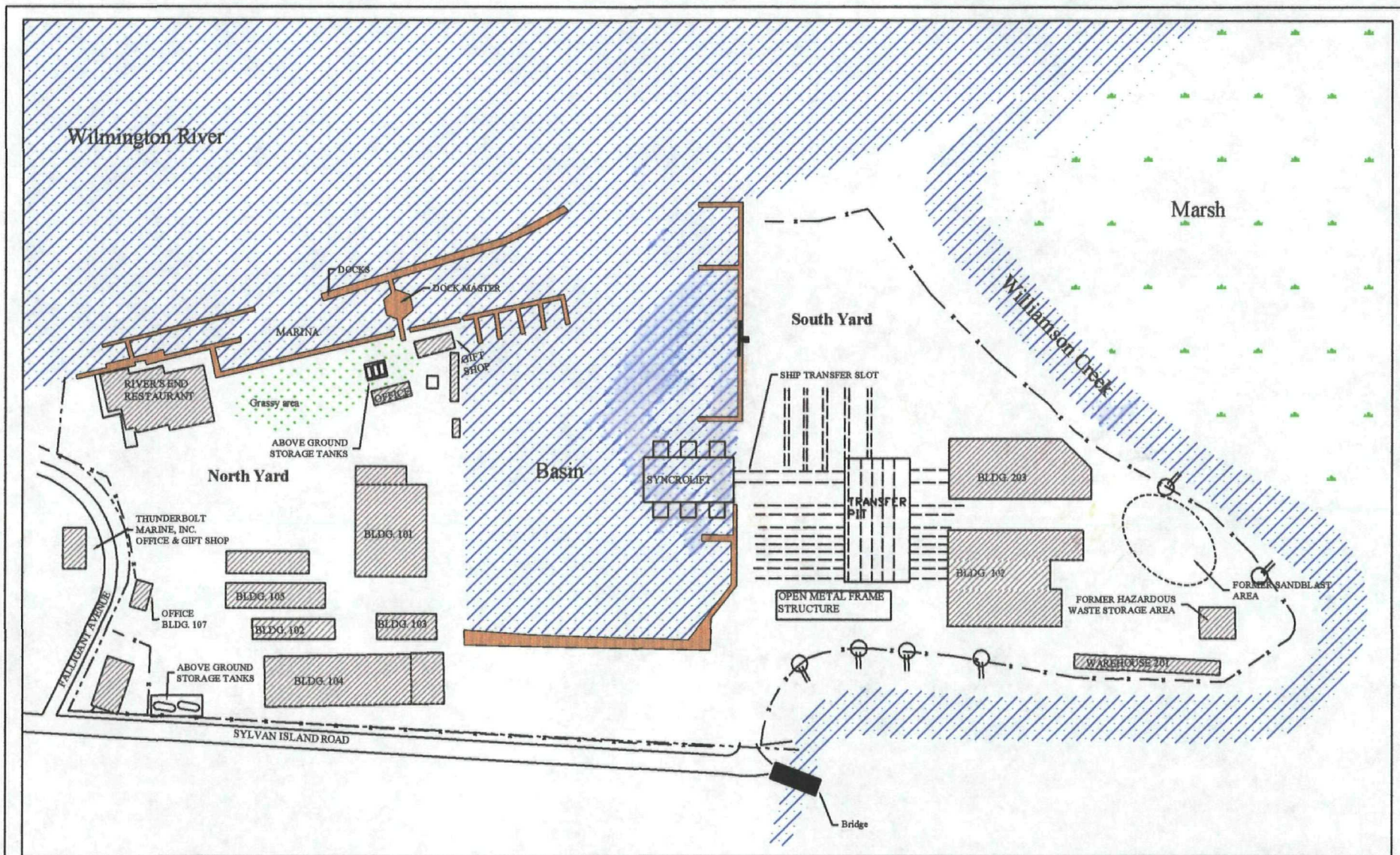
MODIFIED FROM USGS 7.5 MINUTE  
QUADRANGLE: SAVANNAH, GEORGIA.

LATEX CONSTRUCTION COMPANY  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA  
TDD No. 4T-01-10-A-006  
EPA ID No. GAD980803696

FIGURE 1 - GENERAL SITE MAP



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# LEGEND

	BUILDINGS		DOCKS		DRAINAGE OUTFALL
	PROPERTY LINE		WATER		APPROXIMATE BOUNDARY
	TRANSFER RAIL		FENCE		

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GEORGIA  
EPA ID No. GAD980803696  
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FIGURE 2 - SITE LAYOUT MAP

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## 2.2 SITE OPERATIONS AND REGULATORY HISTORY

A complete site history has not been documented. In the 1950s, the facility reportedly was developed on reclaimed marsh land between the Wilmington River and Williamson Creek. Prior to the 1950s, the area along the Wilmington River was used by shrimp boats for docking (Ref. 9, p. 3). The marina and dock were in place in 1953 (Ref. 5, Vol. 1, p. 6, Vol. 2, p. 3). In 1963, what is presently called the south yard was a low-lying marsh. The basin existed between the north and south yards, but no seawalls were in place to prevent erosion of sediments along the edge of the basin. The basin subsequently was dredged, seawalls were installed, and the south yard reportedly was constructed on dredged materials. The south yard was constructed on driven pilings that were filled with dredge material. Bilge waste (water that collects in the hold of a ship or boat) from shrimp boats and other vessels was routinely discharged into the Wilmington River and may have influenced the basin. As a result, the south yard may have been contaminated by sediments dredged from the river and used as fill. About 50 to 60 percent of the yard was surfaced with asphalt before the buildings (Refs. 5, Vol. 1, pp. 6, 7, Vol. 2, pp. 3, 4; 9, p. 3; 10, pp. 1, 5).

Latex purchased the property in 1965, and TMI, a subsidiary of Latex Construction Company, operated the facility from 1972 to 1986. TMI constructed tug boats, pleasure boats, fishing boats, and barges at the facility (Refs. 9, p. 3; 10, pp. 1, 5, 11). Boat hulls were sandblasted and repainted with paints that contained heavy metals (Ref. 11). Pleasure boats were displayed in the western part of Building 101, which was the first structure built in the north yard. Several other buildings subsequently were constructed on the north and south yards. TMI was incorporated as a wholly-owned subsidiary of Latex Construction Company in 1981. TMI subsequently became a separate entity in 1986 (Refs. 9, pp. 2, 3; 12, p. 42). Lockheed Shipbuilding Company (Lockheed) leased the facility and all of the buildings in July 1986. In 1987, Lockheed constructed building 105 in the north yard and the hazardous waste storage facility (Refs. 9, pp. 2, 3; 12, p. 42).

Under contract with the U.S. Army, Lockheed constructed Landing Craft Utility (LCU) vessels at the facility. The construction process consisted of the following (Ref. 9, pp. 4, 5):

- Cutting raw stock steel with plasma cutter
- Descaling and priming the rough cut steel
- Grinding the steel edges using pneumatic grinders
- Welding steel together with heli-arc, oxy-acetylene, and carbon dioxide-argon welders
- Sandblasting and second coat painting
- Installing of power plants and air conditioning units
- Assembling and installation of electric components
- Machining and installation of hydraulic lines
- Performing final assembly of the components into the LCU
- Painting interior and exterior of the LCU

Lockheed used the following buildings and areas during its operations (Refs. 9, pp. 2, 5 - 12; 10, pp. 1, 5, 6):

- Building 101 - Storage and small component fabrications
- Building 102 - Warehouse, lockers, machine repair
- Building 103 - Warehouse, offices, welding equipment maintenance
- Building 104 - Fabrication building
- Building 105 - Descaling and primer paint application (for a brief period until applications were moved to another building at an unspecified time)
- Building 107 - Human resources
- Aboveground fuel storage (no building number)
- Thunderbolt Marine, Inc.
- West storage area (an open lot used for parking vehicles)
- Building 201 - Warehouse storage
- Building 202 - Module building
- Building 203 - Outfitting building
- Sandblast area
- Hazardous waste storage area
- Subassembly platens 1 through 6
- Subassembly platens 1A, 1B, 2A, and 2B
- Pier No. 1
- Pier No. 2
- Basin

The following discussion pertains to Lockheed's operations as the facility. However, buildings and permanent structures remain at the same locations, and many of the applications and operations may have been conducted in the same areas by subsequent facility operators located in the north yard are Buildings 101, 102, 103, 104, 105, and 107, two aboveground fuel storage tanks (a 20,000-gallon diesel tank and a 10,000-gallon unleaded gasoline tank), and a storage area for metal stock (Ref. 9, pp. 2, 5 - 7). Rivers End Restaurant and the TMI marina are located on the east side of the north yard (Refs. 13; 14, p. 3). When Lockheed operated the facility, fuel from the two aboveground fuel storage tanks was delivered to three aboveground fuel tanks near the TMI marina via underground lines. The fuel was dispensed from the three tanks to boats at the TMI marina (Refs. 9, pp. 5 - 7; 10, pp. 1, 7).

Activities in the north yard included welding, cutting of metal stock, vehicle and equipment maintenance, cleaning of parts, descaling of raw steel with steel shot, priming of steel, and painting in an automated spray booth. Welding was conducted in the storage and small component fabrication building (Building 101) with carbon dioxide-argon gas and oxygen. Small quantities of oil and grease were used in the north end of Building 102 for equipment maintenance. Lockheed changed the oil and repaired mobile cranes and other vehicles west of Building 102. In 1988, a Wagoner transformer was located next to Building 102. Lockheed conducted maintenance on welding equipment in Building 103 (Ref. 9, pp. 5 - 7).

Building 104 stored a plasma cutter and associated water holding tank where the bottom foresection of the LCU was constructed. Welding with argon-helium, oxy-acetylene, and heli-arc systems was also conducted in Building 104. Descaling and primer painting were conducted in Building 105. Raw stock steel plates were descaled and painted with primer. The mill scale was removed by a wheelabrator that used small steel shot as an abrasive. The shot was sucked into a bag house operation for removal and placed in 55-gallon drums outside Building 105. The plates were then moved into an automatic spray booth where the paint was applied. The overspray was captured on a filter media and was discarded in commercial trash bins. Volatile components of the paint were carried up to the top of the building and discharged to the atmosphere. The paint booth discharge was covered by an air quality permit issued by the Georgia Department of Natural Resources, Air Quality Control Section (Ref. 9, pp. 5 - 7).

The west storage yard is located west of Sylvan Island Road. There, Lockheed stored equipment and old vehicles, including pipe fittings, old tires for cranes, a fork lift, a Dodge truck, pier pilings, spools of wire rope, and four ship/truck containers with equipment (Ref. 9, pp. 7, 8). The west storage area also was used by TMI in 1989 (Refs. 5, p. 13; 10, pp. 1, 7; 15, pp. 4, 5).

The basin comprises 7 acres and is located in the center of the facility between the north and south yards. A synchrolift, which is used to remove the ships from the water, is located in the south center of the basin (Refs. 9, p. 12; 14, p. 3). Lockheed used the basin to move ship components from Building 104 to the south yard and to dock completed LCUs. TMI used the basin to dock dredges and small tug boats (Refs. 9, p. 12; 10, pp. 1, 7).

Buildings 201, 202, and 203, the hazardous waste storage area, the sandblast area, subassembly platens 1 through 6, and the transfer pit are located in the south yard (Ref. 9, pp. 2, 8 - 11). The Module Building (Building 202) housed machine, pipe cutting, and electrical component shops; offices for management, production, and accounting; and a large open area for component construction. The machine shop contained three large lathes, a radial drill, a milling machine, and two drill presses that required cutting oil for operation. Overspray of the cutting oil was generally contained by recycling units on the machinery. Overspray not contained by the machinery ended up on the concrete floor and was periodically absorbed with dry sweep and disposed of in commercial bins (Ref. 9, p. 8).

Pipe cutters, band saws, a computerized pipe bender, a small bead sandblasting unit, oxygen acetylene, carbon dioxide argon cylinders, and heli-arc welding equipment were located in the pipe cutting shop. The electrical shop contained small electrical components for the LCUs. Oil and solvents were dispensed from pint cans in this area. An air-cooled transformer was located outside the electrical shop. The large component construction area in the north part of Building 202 was used to store LCU power plant equipment and for small part painting (Ref. 9, p. 8). Lockheed used the Outfitting Building (Building 203) for storing furniture and components, and constructing and painting the LCU superstructure (Ref. 9, p. 9).

Lockheed constructed the hazardous waste storage area in 1987 for storing both virgin product and waste product. The hazardous waste storage area contains two aboveground 10,000-gallon waste-oil tanks surrounded by a 3-foot-high concrete berm. The area also contained a 1,000-gallon unleaded gasoline tank and a 500-gallon diesel tank surrounded by a 0.5-foot-high berm. Fluid contained within the 3-foot berm was periodically drained to the ground from the south side of the containment structure. Waste oil was periodically recycled by Waste Oil Recovery Service of Jacksonville, Florida. Waste solvent was periodically collected by Ashland Chemical Company and shipped to a hazardous waste site under a hazardous waste manifest (Ref. 9, p. 10).

The sandblasting area is located south of Buildings 202 and 203 and was used for sandblasting and painting LCUs (Ref. 9, p. 9). Ships were brought from the basin to the sandblast area via a rail system. The ships were first placed on rolling cradles and lifted from the water on the synchrolift. The ship was then rolled to the transfer pit, where it could be moved to one of the shops or the sandblast area (Ref. 15, p. 8). A 20-foot-diameter sand hopper supplied the sand used for sand blasting the metal, and compressed air was supplied by two stand-alone mobile compressors. Lockheed used a manmade silica sand blasting product called Black Beauty prior to using a natural sand grit for sand blasting operations. Paint, paint equipment, and personal equipment for the painters was stored in sheds built on top of dredge fill located near the sandblast area (Refs. 9, p. 9; 15, p. 6). Management and disposal of sandblasting materials and wastes were not discussed in the available file material.

Lockheed used subassembly platens 1 through 6 to conduct discreet operations and assemble vessels (Ref. 9, p. 11; 15). Platens 1 through 3 were used to construct the three decks of the LCU superstructure. Grinders and heli-arc welders using carbon dioxide-argon, oxygen, and natural gas were used in these areas. Subassembly platen 4 was used for constructing submarine missile repair modules. Subassembly platen 5 was used to park and repair large cranes used for lifting LCU components. Subassembly platen 6 was used for storing large block and tackle equipment, ship anchor chains, and subcontractor supply trailers. Subassembly platens 1A, 1B, 2A, and 2B were used for constructing the LCU hull. Grinders and welders were also used in this area. In addition, an old emergency fire pump shed, a natural gas tank with a compressor, an electric winch for pulling hull components out of Building 104, and a sewage lift station were used in this area (Ref. 9, p. 11). Some sandblasting, painting, and paint and drum storage also occurred in the subassembly platens (Ref. 9, p. 11; 15).

In 1988, Lockheed sold its U.S. Army contract to Halter Marine, Inc., a division of Thunderbolt Shipbuilding, which was a division of Trinity Industries, Inc. (Refs. 10, pp. 1, 6; 16). Trinity Industries, Inc., subsequently leased the facility from TMI and assigned the lease to Halter Marine Group. Halter Marine Group reconditioned and manufactured marine vessels until June 1991 (Refs. 10, pp. 1, 6; 17; 18, p. 2). Three processes associated with Halter Marine Group included dry docking and launching, transfer, and repair and shipbuilding. The dry docking and launching process entailed bringing marine vessels on-shore for repair and returning the reconditioned or manufactured marine vessels to the water. The transfer process involved moving marine vessels from one location to another once they were on shore. The repair and shipbuilding process involved initial cleaning, sandblasting, painting, engine repair, and total ship reconditioning. Wastes generated from the various operations included waste alkaline corrosive liquid (D002 - D007), hazardous waste solid (D007), flammable liquid waste (F003 and F005), waste flammable liquid (F003), paint waste (D001), and sandblast grit (Refs. 10, pp. 1, 6; 18, p. 2).

In 1990, Trinity Industries, Inc. was in the process of terminating its operations at the facility and moving partially completed vessels to its Gulf Coast facilities (Refs. 10, pp. 1, 6; 18, pp. 1, 2). In 1992, Palmer Johnson Savannah, Inc., leased the facility from TMI; Palmer Johnson Savannah, Inc., currently operates the facility and repairs and refurbishes luxury yachts (Refs. 3; 10, pp. 1, 6, 12). During the spring of 2001, a new fuel storage and delivery system replaced the former three aboveground fuel storage tanks in the north yard near the TMI marina. Two underground glass-steel storage tanks and a tank monitor that can detect 0.1 gallon-per-hour leaks and water intrusion were installed in the north yard near the TMI marina. A sump and sensor also were installed at the TMI marina dock to detect line leakage. Palmer Johnson Savannah, Inc., maintains the required tank permits issued by GDNR and the Fire Marshall (Ref. 10, pp. 1, 7, 14).

Palmer Johnson Savannah, Inc., is classified as a handler under RCRA, EPA ID No. GAD984313742 (Ref. 19, pp. 1, 16). Trinity Industries, Inc., and Halter Marine Group apparently were not regulated under RCRA (Ref. 19, pp. 1, 11 - 13). Lockheed submitted a RCRA Part A permit application and was a handler under RCRA, EPA ID No. GAD981223688 (Ref. 19, pp. 1, 9). TMI and Latex (EPA ID No. GAD980803696) were not regulated under RCRA (Ref. 19, pp. 1 - 6).

High concentrations of heavy metals including arsenic, copper, mercury, nickel, and zinc are often found in sediments near shipbuilding and ship repair facilities. The primary source of these pollutants is reported to be primers and anti-fouling paints removed by sandblasting or other methods from ship hulls at repair facilities (Ref. 20, pp. 1, 13). The most significant pollutants from shipyards are the heavy metals present in spent abrasive (Ref. 20, p. 17). Spent abrasives, including old primer and antifouling paint from shipyards often contain high concentrations of copper, zinc, lead, and chromium, and high, but somewhat variable, concentrations of cadmium, tin, mercury, and arsenic (Ref. 20, p. 1).

Spent abrasive accumulates during sandblasting and painting operations. The old paint particles in the used grit are a potential source of pollution. With a much greater surface area exposed than while on the hull, the sandblasted paint is subject to leaching of heavy metals. Because sandblasting is followed almost immediately by painting, some new paint is also present in the form of a thin coating on the surface of the spent abrasive. The quantity of new paint mixed with spent abrasive is directly related to the quantity of heavy metals subject to leaching (Ref. 20, p. 17). Estimates indicate that approximately five percent of the total paint applied to the hull is lost to the drydock and can be discharged to the receiving water. These losses include paint spilled within the drydock, excess applied paint that drips to the floor, overspray due to improper use of spray equipment, and wind-carried paint that lands in the dock (Ref. 20, p. 18). Discharges during blasting and painting operations contain metals in both particulate and soluble form. In addition, some sandblasting grit is carried by water within dock areas, resulting in discharge of suspended and settleable solids (Ref. 20, p. 13)

An important part of ship construction and maintenance is the application of marine coatings to prevent fouling by marine organisms and corrosion. Marine coatings are comprised of three parts: an organic binder to create a continuous solid film upon curing, an organic solvent that thins the binder for application, and a pigment. Anti-fouling paints most commonly contain cuprous oxide and organotin compounds that are the active biocidal agent. The paint may also contain a leaching agent or resin to allow controlled release of the active ingredient. The most common marine anti-corrosive coatings are vinyls, chlorinated rubbers, epoxies (especially polyamide-cured varieties), urethanes, polyesters, inorganic zincs, and zinc-rich organic compounds (Ref. 21, pp. 445, 446, 448 - 450).

Among the trialkyl tins (a class of organotin compounds), tributyl tin is known for providing the best balance of fungicidal and bacterial activity and mammalian toxicity. Triorganotins are also preferred anti-foulants because they degrade into alkylated species and nontoxic inorganic tin once released from the paint (Ref. 22, pp. 59, 60). On March 1, 1990, a rule restricting the use of tributyl tin anti-foulant paints became effective. Now these paints can only be applied by specially trained, certified commercial applicators (Ref. 23).

Prior to painting, the surface of the ship must be prepared by sanding or abrasive blasting to obtain adequate bonding. Sandblasting creates the potential for air release of fine particulates. Settling of the particulates and any washdown creates the potential for release to soil, surface water, and sediments (Ref. 21).

At the facility, both natural materials and manmade silica sand have been used for sandblasting (Ref. 9, p. 9). Black Beauty, the trade name of the silica sand most recently used by the facility, is a by-product of coal combustion and is also called boiler slag (Refs. 9, p. 9; 15, p. 6; 24; 25). Typically, it is a fused ferro-alumino-silicate in the form of a noncrystalline glass (Ref. 24). Analysis provided by the manufacturer indicates that pure Black Beauty may contain low levels of arsenic and beryllium; however, the uncontaminated product is chemically inert and virtually non-leachable (Refs. 25; 26). The overall appearance of the material is that of a coarse, black aggregate (Ref. 24).

## **2.3 PREVIOUS RELEASES AND INVESTIGATIONS**

In February 1983, a concerned citizens group called Friends of the Wilmington River collected sediment samples from Williamson Creek around the perimeter of the Latex facility and at two locations outside of the facility's area of influence. Sample analysis revealed the presence of copper, lead, and zinc as high as 640 parts per million (ppm), 865 ppm, and 2,600 ppm, respectively (Refs. 27; 28; 29). The Friends of the Wilmington River subsequently contacted GDNr and EPA regarding the facility's request to the U.S. Army Corps of Engineers (USACE) to alter the course and dredge the mouth of Williamson Creek in order to expand the facility. They also expressed concern due to the metals detected in the creek (Refs. 27; 28; 29; 30; 31; 32).

Latex subsequently commissioned the University of Georgia Marine Extension Service (the Marine Extension Service) to conduct an independent study of stream sediments in the Thunderbolt area (Ref. 33, p. 2). The Marine Extension Service collected four sediment samples in February 1983. One sample was collected from the end of the marshy spit on the Williamson Creek side at the confluence of the creek and the Wilmington River. The second sample was collected from the west bank of Williamson Creek, approximately 75 feet from the Latex paint shop. The third sample was collected from the south bank of the Wilmington River, downstream of the confluence of Williamson Creek and the river. The fourth sample was collected upstream of the facility near the western bank of the Wilmington River, directly beneath the Highway 80 bridge (Ref. 33, exhibit 1, pp. 1, 2).

Samples were analyzed by the Skidaway Institute and the results revealed copper, lead, and zinc at 16 parts per million (ppm), 29 ppm, and 55 ppm, respectively, in Sample 1. Copper, lead, and zinc were detected at 42 ppm, 49 ppm, and 130 ppm, respectively, in Sample 2. Sample 3 contained copper, lead, and zinc at 31 ppm, 37 ppm, and 100 ppm, respectively. Sample 4 contained copper at 96 ppm, lead at 77 ppm, and zinc at 140 ppm (Ref. 33, exhibit 1, page 3).

In a letter to USACE, Latex stated that (1) the copper, lead, and zinc concentrations detected in sediment samples collected by the Marine Extension Service were within the normal ranges reported in several studies of Savannah River sediments and (2) the results indicate that there is not a contamination problem in the Latex area (Ref. 33, p. 4). In response to the Latex letter, the Friends of the Wilmington River noted that the sediment samples collected during the Marine Extension Service sampling event were not collected from the same locations as the samples collected by the Friends of the Wilmington River and indicated that it was incorrect to conclude that a contamination problem did not exist in the Latex area. The Friends of the Wilmington River pointed out that two discrete conveyances were found leading from the Latex property to Williamson Creek and that the Friends of the Wilmington River samples were collected from the mouth of the conveyances. The Friends of the Wilmington River also noted that the Savannah River was dredged routinely and Williamson Creek was not, and further noted that dredge would affect the metals concentration in the Savannah River (Ref. 34).

In February 1986, the GDNR Environmental Protection Division prepared a preliminary assessment (PA) of the Latex facility. The PA indicated that no process wastewaters from the facility entered Williamson Creek. However, wastes in the form of paint chippings and sandblasting residues may have entered Williamson Creek through washdown water or surface water runoff. The PA assessed a "low" priority for a site inspection due to contradictory and incomplete existing information (Ref. 11).

Lockheed contracted McLaren Environmental Engineering (McLaren) to complete an environmental assessment and verification sampling program in June, July, and August 1988. Phase I consisted of an initial site survey and design of a baseline sampling program for the facility. Phase II consisted of asbestos sampling, soil sampling, groundwater monitoring well installation, water quality sampling, and marine sediment sampling (Ref. 9, p. 1).

During the McLaren Phase I site survey, staining was noted on the asphalt west of Building 102 where vehicle repairs were conducted. No drip containment was provided under the dispensing cradle, and hydraulic oil, lube oil, and automatic transmission fluid were dripping onto the asphalt. McLaren also noted that the area was periodically washed down, and washwater drained to the soil south of the dispensing cradles. A Sulair compressor was leaking small amounts of hydraulic oil outside along the west edge of Building 102. A stain extended about 1 foot around the base of the compressor. A Wagner transformer was also noted next to Building 102. The welding repair area in Building 103 contained one 55-gallon drum of "Electric Kleen" solvent (Ref. 9, p. 6).

The McLaren Phase I site survey noted that in Building 202, the concrete floor in the machine shop was stained and generally oily around the machinery. One 55-gallon drum of cutting oil was observed in the machine shop, along with argon gas cylinders used for welding. Oil and solvents were dispensed from cans in the electrical shop area. An air-cooled transformer was noted outside of the electrical shop. Paint overspray was noted on the asphalt floor of the large component construction area in the north part of Building 202. Oxygen and acetylene cylinders were also present. Along the edge of the asphalt paving behind Building 202, an area of sand approximately 10 feet by 20 feet appeared to contain an oil residue (Ref. 9, p. 8). Along the eastern edge of the outfitting building (Building 203) were approximately 65 gas cylinders including oxygen, acetylene, and carbon dioxide argon used for welding. Seven oxygen and argon cylinders were noted inside the building. Outside the south end of the building, a Sulair air compressor used for sandblasting had leaked hydraulic oil and an approximately 10-foot area of oil soaked sand and dust surrounded the compressor (Ref. 9, p. 9).

Potential sources of environmental concern noted in the sandblasting area during the McLaren Phase I site survey, included used sandblasting grit, paint and solvent use and handling, and storage associated with the paint storage trailer. The paint storage trailer contained about 50 5-gallon cans of paint, 20 1-gallon cans of paint, and a 55-gallon drum of methyl ethyl ketone for cleaning spray guns and parts. Twenty empty 5-gallon cans without lids were stacked randomly outside the trailer, and there was evidence that paint and solvent had been spilled on the floor inside the trailer. The outside area was covered with sandblasting debris; therefore, any spilled paint could have been covered by the debris (Ref. 9, pp. 9, 10).

Potential sources of environmental concern noted in the hazardous waste storage area during the McLaren Phase I site survey included drainage from the 3-foot concrete containment berm for the 10,000-gallon tanks, the ground around the 200-gallon portable tanks used for transporting diesel and unleaded gasoline, and the general vicinity of the unpaved area where waste solvent or oil may have been temporarily stored or handled. Approximately 54 55-gallon drums of methyl ethyl ketone, methyl isobutyl ketone, xylene, liquid caustic soda, and waste solvent were on a concrete pad in the covered hazardous waste storage area. Three barrels of waste methyl ethyl ketone were on the ground 50 feet south of the covered area. Approximately 0.1 foot of water with an oily sheen was observed within the 3-foot-high containment berm surrounding the 10,000-gallon waste oil tanks. Lockheed periodically drained the accumulated liquid to the ground surface on the south side of the containment structure. A portable 200-gallon diesel tank and a portable 200-gallon unleaded tank were on the ground, and two portable 200-gallon waste oil tanks were located 50 feet south of the covered hazardous waste storage area on the ground (Ref. 9, pp. 10, 11).

During the McLaren Phase I site survey, approximately 40 55-gallon drums of hydraulic oil and antifreeze were observed in the vicinity of Pier No. 1, where the first completed Lockheed LCU was docked. All drums were covered, 10 drums were stored on the concrete, and 30 drums were stored on the ground. No stains were observed, and none of the drums appeared to be leaking. Drums of freon, hydraulic oil, and soap were stored in the vicinity of Pier No. 2 (Ref. 9, pp. 11, 12).

The Phase I site survey indicated that one documented spill occurred in the basin during the two years that Lockheed had occupied the facility. Approximately 25 gallons of hydraulic fuel accidentally spilled into the basin during the first quarter of 1988. The spill was reported to the U.S. Coast Guard Marine Safety Division in Savannah. It was noted that historical operations, past construction practices in the basin, or bilge water from sources other than Lockheed or TMI may have resulted in chemicals filtering into the basin sediments (Ref. 9, p. 12).

During the Phase II baseline sampling program conducted the week of July 25, 1988, eight wells were drilled, constructed, and sampled. Also, soil, marine sediment, and water samples were collected at the Lockheed facility. Except for surficial groundwater samples, no background samples were collected for comparison. Additional sampling occurred during the weeks of August 1 and August 8 to verify previous water and soil quality data (Ref. 9, pp. 13, 27).

During the Phase II baseline sampling program, three soil samples (HA-08, HA-09, and HA-10) were collected from the edge of a dark stain located in the crane parking area at subassembly platen 5 on the east side of the south yard. Ethylbenzene was detected at 0.1 ppm in both samples HA-8 and HA-10. Total xylene was detected at 1.04 ppm in sample HA-8, at 0.17 ppm in sample HA-9, and 0.93 ppm in sample HA-10 (Ref. 9, pp. 14, 15, 19, 24, 27). A soil sample (HA-13) was collected from a dark stained area observed in the drainage pathway leading from the machine shop located in Building 202. Sample analysis revealed ethyl benzene at 0.2 ppm and total xylenes at 1.5 ppm. A surface soil sample (HA-14) also was collected from beneath the asphalt located in the vehicle repair area near Building 202; trichlorofluoromethane was detected at 0.03 ppm (Ref. 9, pp. 14, 16, 18). A surface soil sample (HA-15) was collected from the sandblast area near the sand hopper; total xylene was detected at 0.09 ppm. Another surface soil sample (HA-16) was collected west of the causeway wall and the basin in an area where sandblasting grit was used for fill; total xylene was detected at 0.11 ppm (Ref. 9, pp. 14, 16, 23).

Trichloroethylene, tetrachloroethylene, benzene, and toluene were the only organic constituents detected in groundwater samples collected from monitoring wells installed on site during the Phase II baseline sampling program. Tetrachloroethylene was detected at the detection limit of 0.5 part per billion (ppb) in well MW-1 installed north of Building 101 and west of the TMI marina. Trichloroethylene was detected at 1 ppb in well MW-4 installed west of Building 202, between Building 202 and Williamson Creek. Trichloroethylene was detected at 5 ppb, tetrachloroethylene was detected at 6.5 ppb, and benzene and toluene were both detected at 2 ppb in well MW-8 installed between the sandblasting area and Williamson Creek (Ref. 9, pp. 14, 17, 23).

Several inorganic constituents were detected in samples collected from waste sandblasting grit. Six samples were collected from two depth intervals (0.5 foot below land surface [bls] and 1.0 foot bls) at three different sampling locations (CS-1, WG-1, and GP-1). The two samples collected at the sampling location CS-1 were from waste sandblasting grit used as fill behind the causeway wall west of the basin. The two samples collected at sampling location WG-1 were from a waste sandblasting grit pile located in the hazardous waste storage area. The two samples collected at sampling location GP-1 were from waste sandblasting grit in the sandblasting area (Ref. 9, pp. 14, 17).

Antimony was detected at 6 ppm in CS-1 at 0.5 foot bls. Barium was detected in all six samples at concentrations ranging from 70 ppm to 100 ppm. Beryllium was detected in all six samples at concentrations ranging from 0.9 ppm to 5 ppm. Cadmium was detected in all six samples at concentrations ranging from 0.5 ppm to 0.9 ppm. Chromium was detected in all six samples at concentrations ranging from 21 ppm to 71 ppm. Cobalt was detected in all six samples at concentrations ranging from 5 ppm to 28 ppm. Copper was detected in all six samples at concentrations ranging from 410 ppm to 2,800 ppm. Lead was detected in all six samples at concentrations ranging from 150 to 1,500 ppm. Mercury also was detected in all six samples at concentrations ranging from 0.05 ppm to 0.1 ppm. Molybdenum was detected in the two samples collected from both CS-1 depth intervals at 60 ppm and 40 ppm. Molybdenum was also collected at 20 ppm in the sample collected 1.0 foot bls at sampling location GP-1. Nickel was detected in all six samples at concentrations ranging from 27 ppm to 440 ppm. Selenium was detected in all six samples at concentrations ranging from 0.2 ppm to 0.3 ppm. Vanadium was detected in all six samples at concentrations ranging from 5 ppm to 10 ppm and zinc was detected in all six samples at concentrations ranging from 1,500 ppm to 2,900 ppm (Ref. 9, p. 26).

Analysis of five sediment samples (GS-1, GS-2, GS-3, GS-4, and GS-5) collected from the basin revealed the presence of several inorganic constituents including arsenic, chromium, cobalt, copper, lead, mercury, thallium, vanadium, and zinc. Arsenic was detected in all five sediment samples at concentrations ranging from 0.9 ppm to 7.5 ppm. Chromium was detected in all five sediment samples at concentrations ranging from 14 ppm to 21 ppm. Cobalt was detected in all five sediment samples at concentrations ranging from 2 ppm to 6 ppm. Lead was detected in all five sediment samples at concentrations ranging from 10 ppm to 51 ppm. Mercury was detected in one sediment sample at a concentration of 0.24 ppm. Nickel was detected in all five sediment samples at concentrations ranging from 4 ppm to 10 ppm. Thallium was detected at 20 ppm in all five sediment samples. Vanadium was detected in all five sediment samples at concentrations ranging from 10 ppm to 20 ppm. Zinc also was detected in all five sediment samples at concentrations ranging from 21 ppm to 240 ppm (Ref. 9, pp. 14, 16, 26, 27).

The McLaren property transaction environmental assessment and verification sampling concluded that the use, storage, handling, and disposal of hazardous wastes, as well as equipment maintenance procedures at the facility, could be improved. Hazardous wastes were stored on soil outside of the designated hazardous waste storage area, while vehicle maintenance was conducted on bare soil or in an area that drained onto soil; oil leakage from air compressors did not appear to be cleaned on a frequent basis. The report also noted that the Phase II sampling assessment indicated that Lockheed's operations at the facility over 3 years had little environmental impact with the exception of the sandblasting area. The waste sandblasting grit was stockpiled on bare soil and contained "elevated" levels of chromium, copper, lead, nickel, and zinc. The report did not define what was meant by "elevated." McLaren recommended that the waste grit be properly disposed of in accordance with State of Georgia regulations and that future sandblasting operations be conducted in a manner such that the waste grit was confined to a specific work area and cleaned up and disposed of on a regular basis (Ref. 9, pp. 29, 30).

In February 1989, McLaren prepared a property transaction, excavation, and verification sampling report for Lockheed. McLaren excavated and conducted verification sampling at three areas identified in the 1988 environmental assessment and verification sampling. The three areas excavated included the crane parking and repair area, a topographically low area behind Building 202, and an oil-stained area resulting from air compressor leakage near Building 203 (Ref. 14, p. 1). Approximately 45 cubic yards of material was excavated from the three areas at the facility. Analyses of samples collected from the excavated areas indicated that all petroleum-contaminated soil had been excavated. The excavated areas were backfilled using clean fill. Excavated material was disposed of at the Savannah Sanitary Landfill, by permission of GEPC (Ref. 14, pp. 3, 5, 8, 10).

Additional sediment samples collected from the basin during the 1989 McLaren property transaction, excavation, and verification sampling were analyzed for heavy metals. Antimony, arsenic, beryllium, cobalt, copper, lead, mercury, nickel, selenium, vanadium, and zinc were detected in the sediment samples at concentrations below EPA designated levels to protect marine waters (Ref. 14, pp. 8, 10, 11).

During the week of September 11, 1989, the NUS Corporation (NUS) Field Investigation Team conducted a screening site inspection (SSI) at the facility on behalf of EPA. NUS collected 17 environmental samples during the SSI, including 6 surface soil, 5 subsurface soil, and 6 sediment samples. Groundwater samples were not collected during this investigation. Sediment samples were collected from the basin, Williamson Creek, and the Wilmington River. One sediment sample was collected each from Williamson Creek and the Wilmington River as a control sample for comparison to on-site and downstream samples (Ref. 35, pp 1, 25 - 29).

During the SSI sampling investigation, NUS personnel observed solvent spills and several dark stains near the paint shop. The TMI contractor informed NUS personnel that floor drains in the buildings discharge to the marsh (Ref. 15, pp. 10, 11).

During the SSI sampling investigation, NUS personnel noted that sandblasting was not conducted under any type of cover to prevent particles from migrating into the adjacent salt marsh. Sandblast grit was observed in the sandblast area, in the marsh grasses, and in the sediments of Williamson Creek adjacent to the sandblast area. Black Beauty sandblasting grit was observed covering a 90-foot by 150-foot area. Two waste piles of Black Beauty, one pile approximately 12 feet in diameter and 5 feet high, and another pile approximately 30 feet long, 9 feet wide, and 4 feet high, were also observed in the sandblast area. In addition, the contractor for TMI informed NUS personnel that a pit, approximately 8 feet deep, in the sandblast area was reportedly used to dispose of bilge waste from the ships (Ref. 15, pp. 8, 10, 19, 32, 34).

NUS collected four soil samples (LC-SS-03, LC-SB-03, LC-SS-04, and LC-SB-04) from the sandblast area. Surface soil sample LC-SS-03 was collected beneath loose sandblasting grit east of transfer rails located in the sandblasting area. Subsurface soil sample LC-SB-03 was collected approximately 10 to 12 feet bls in saturated soil beneath 10 feet of sandblasting grit between the transfer rails. Surface soil sample LC-SS-04 was collected between a pile of sandblasting grit and the sandblasting area. Subsurface soil sample LC-SB-04 was collected from saturated soil 6 feet bls in the same location as surface soil sample LC-SS-04 (Ref. 35, pp. 26, 27, 29). Significant concentrations of polycyclic aromatic hydrocarbons (PAH) typical of petroleum and oil products, inorganic constituents, and organotin compounds were detected in samples collected from the sandblast area (Ref. 35, p. 31). NUS defined "significant" as a concentration either three times that found in the background or control sample three times the minimum quantitation limit (MQL) (Ref. 35, p. 30).

Significant concentrations of phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, and benzo(a)pyrene were detected in subsurface soil sample LC-SB-03. Significant concentrations of phenanthrene, fluoranthene, benzo(a)anthracene, chrysene, and benzo(a)pyrene were detected in surface soil sample LC-SS-04 (Ref. 35, pp. 31 - 33). Zinc was the only inorganic constituent detected at significant levels in surface soil samples LC-SS-03 and LC-SS-04; however, significant levels of arsenic, barium, cadmium, chromium, copper, lead, vanadium, and zinc were detected in subsurface soil samples LC-SB-03 and LC-SB-04 (Ref. 35, pp. 31, 35, 36). The organotin compounds dibutyl tin and tributyl tin were detected at significant levels in surface soil sample LC-SS-03. Monobutyl tin, dibutyl tin, and tributyl tin were detected at significant levels in subsurface soil sample LC-SB-03 (Ref. 35, pp. 37, 38).

One surface soil sample (LC-SS-06) and one subsurface soil sample (LC-SB-05) were collected from the overflow sandblast area in the northeast corner of the south yard. No organic constituents were detected at significant levels in surface soil sample LC-SS-06 and subsurface soil sample LC-SB-05. Several inorganic constituents, including arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, and zinc, were detected at significant levels in surface soil sample LC-SS-06. Arsenic, cadmium, vanadium, and zinc were also detected at significant levels in subsurface soil sample LC-SB-05 (Ref. 35, pp. 35, 36, 42). Dibutyl tin and tributyl tin were detected at significant concentrations in surface soil sample LC-SS-06; however, no organotin compounds were detected at significant levels in sample LC-SB-05 (Ref. 35, pp. 38, 42).

During the SSI sampling investigation, NUS personnel observed several stains around the hazardous waste storage area. A stain approximately 18 feet by 8 feet was observed in front of the hazardous waste storage area, and a large stain was observed on the west side of the hazardous waste storage area. Stains also were observed on the south side of the hazardous waste storage area and beneath the discharge drain within the 3-foot-high concrete containment berm surrounding the hazardous waste storage area. Assorted 5-gallon buckets and an empty, open 55-gallon drum of methyl ethyl ketone were lying on its side in a shed in the south yard near the hazardous waste storage area (Ref. 15, pp. 8, 9, 16). NUS collected two surface soil (LC-SS-02 and LC-SS-05) and one subsurface soil (LC-SB-02) sample near the hazardous waste storage area. Surface soil sample LC-SS-02 was collected below the discharge drain in the containment berm, and surface soil sample LC-SS-05 was collected from a stained area adjacent to the hazardous waste storage area. Subsurface soil sample LC-SB-02 was collected southeast of the hazardous waste storage area (Ref. 35, pp. 26, 27, 29, 42).

Analyses of surface soil sample LC-SS-05 revealed significant levels of 2-methylnaphthalene, fluorene, and phenanthrene. Significant levels of arsenic, chromium, cobalt, copper, lead, and zinc were detected in surface soil sample LC-SS-02. Significant levels of arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, vanadium, and zinc were detected in surface soil sample LC-SS-05. Barium, chromium, vanadium, and zinc were also detected at significant levels in subsurface soil sample LC-SB-02 (Ref. 35, pp. 35, 36, 42, 43). Monobutyl tin, dibutyl tin, and tributyl tin were detected at significant levels in surface soil LC-SS-02 (Ref. 35, pp. 38, 43).

NUS collected one sediment sample (LC-SD-02) from the center of the basin. No organic constituents were detected in sediment sample LC-SD-02. Inorganic constituents detected at significant levels in sediment sample LC-SD-02 included arsenic, cadmium, chromium, cobalt, lead, vanadium, and zinc. No significant levels of organotin were detected in sediment sample LC-SD-02 (Ref. 35, pp. 39 - 41, 43).

Chloroform was the only organic constituent detected at a significant level in the sediment sample collected from the Wilmington River downstream of the facility; however, chloroform was also detected in the control sample collected from Williamson Creek and, therefore, may not be site-attributable. No inorganic or organotin constituents were detected at significant levels in the sediment sample collected from the Wilmington River downstream of the facility (Ref. 35, pp. 39 - 41, 43).

During the sampling investigation, NUS personnel observed Black Beauty sandblasting grit in the salt marsh of Williamson Creek adjacent to the sandblasting area. Black Beauty was also noted on top of the sediments of Williamson Creek at sediment sampling location LC-SD-05 (Ref. 15, p. 32).

NUS collected two sediment samples from Williamson Creek. Sediment sample LC-SD-05 was collected near the paint shop, and sediment sample LC-SD-06 was collected at Williamson Creek's confluence with the Wilmington River. Fluoranthene, chrysene, benzo(b and/or k)fluoranthene, and benzo-a-pyrene were detected at significant concentrations in sediment sample LC-SD-05.

Benzo-a-pyrene was the only constituent detected at significant levels in sediment sample LC-SD-06 when compared to both the control samples collected from Williamson Creek and the Wilmington River.

Barium, beryllium, cadmium, copper, lead, nickel, and zinc were detected at significant concentrations in sediment sample LC-SD-05. Cadmium, copper, and lead were also detected at significant levels in sediment sample LC-SD-06 when compared to both control samples (Ref. 35, pp. 37, 39 - 41).

The NUS SSI concluded that analytical results indicated the presence of a variety of organic and inorganic contaminants at the facility and noted that contamination from the sandblast area appeared to be entering Williamson Creek and the adjacent salt marshes. NUS recommended that a listing site inspection be conducted at the facility (Ref. 35, p. 44).

On April 2, 1990, GDNR conducted an inspection at the facility to investigate an allegation that Lockheed was improperly managing the sandblast grit at the facility, ship bilges were pumped out onto the sandblast grit area, and drains from the paint shop regularly discharged into the marsh. It was also reported that numerous stains were noted on the ground, possibly originating from solvents and oils used at the facility. Lockheed was no longer operating at the facility at the time of the GDNR inspection. Trinity Marine Group was leasing the property and had subleased to Thunderbolt Shipbuilding at the time of the inspection. The facility was in the process of terminating its operations and was only conducting post-operational site cleanup and maintenance (Ref. 18).

During the inspection, GDNR personnel observed 6 unlabeled 55-gallon drums containing waste paint material that had been stored on site for 4 months or more, 10 unlabeled 55-gallon drums containing contaminated rags, 28 5-gallon cans, 12 1-gallon cans containing various kinds of waste material, and a sandblast grit pile approximately 10 to 12 feet in diameter near the paint shop. GDNR reported no indication that waste was discharged from the site to the surrounding marshes or that waste discharge from ship bilges had occurred on site. GDNR noted that the facility was operating in violation of Chapter 391-3-11-.08 Part 262.34 because beginning accumulation dates were not marked on drums in the waste accumulation area, drums were not labeled as hazardous waste, and the facility had stored hazardous waste on site for more than 90 days. Wastes generated at the facility, as documented on company manifests, included waste alkaline corrosive liquid (D002 - D007), hazardous waste solid (D007), flammable liquid waste (F003, F005), paint waste (D001), and sandblast grit (Ref. 18).

TMI representatives indicated that in February 1991, during its lease termination process, Trinity Industries contracted Sunbelt Industrial Services, Inc., to remove contaminated materials from the facility. Excavation, grading, and soil removal were reportedly conducted at areas of the facility where visible sandblasting medium or petroleum-stained soils were observed. Approximately 1,250 tons of material were reported to have been excavated and removed from the facility. The disposal location was not specified. TMI subsequently installed a storm water drainage system at the facility, restored the original grade, and paved the unpaved areas (Ref. 10, pp. 1, 11, 12).

In June 1991, the EPA Environmental Photographic Interpretation Center prepared an aerial photography site analysis of the Latex facility. EPA Region 4 requested the analysis to identify evidence of activity at the facility that could contaminate the surface water adjacent to the site. Potential sources of contamination found during the site analysis include numerous light- and dark-toned stains throughout the site; several possible and probable outfalls along Williamson Creek; piles of rusty pipes, horizontal tanks, and drums in open storage; an uncontained blue material; piled waste material; refuse; and possible sandblast waste grit. Other findings included individual vertical and horizontal tanks, and evidence of filling in the south yard and west storage area (Ref. 5, Vols. 1 and 2).

## **2.4 POTENTIAL SOURCE AREAS**

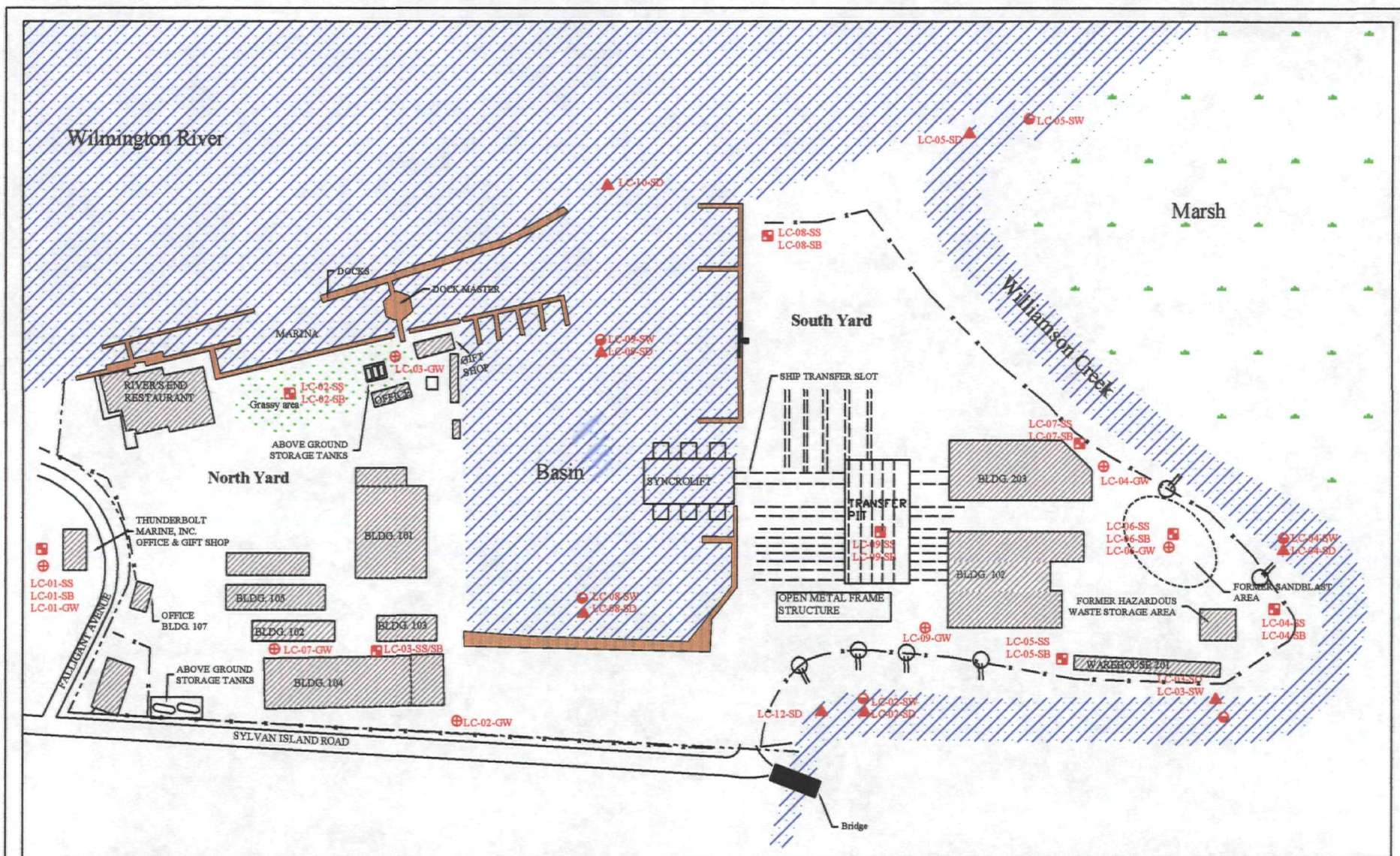
Most of the facility is covered by asphalt; however, minor amounts of exposed soil are located throughout the facility. A minimal quantity of contaminated at various locations throughout the facility is the source area evaluated for this ESI.













## **3.0 ESI ACTIVITIES**

This section outlines field observations and sampling activities at the site. Individual subsections address the sampling investigation and rationales for specific ESI activities. The ESI was conducted during the weeks of March 26 and April 2, 2001, in accordance with the EPA-approved ESI site-specific sampling plan (SSSP), dated September 15, 2000. Photographic documentation of the ESI sampling investigation is presented in Appendix B.

### **3.1 SAMPLE COLLECTION METHODOLOGY AND PROCEDURES**

START personnel collected surface soil, subsurface soil, groundwater, and sediment samples during the ESI field sampling event. Sampling locations are shown on Figure 3 and summarized in Tables 1 through 3. START personnel collected the surface soil samples from 0 to 6 inches bls. Subsurface soil samples were collected from between 2 to 3 feet bls (Refs. 12; 36). All sampling was conducted in accordance with EPA Region 4 Science and Ecosystems Support Division's (SESD) *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual* (EISOPQAM, 1996).



LEGEND				SAMPLES	
	BUILDINGS		DOCKS		DRAINAGE OUTFALL
	PROPERTY LINE		WATER		APPROXIMATE BOUNDARY
	TRANSFER RAIL		FENCE		
					SEDIMENT
					SURFACE WATER
					GROUNDWATER
					SURFACE/SUBSURFACE SOIL

LATEX CONSTRUCTION COMPANY  
THUNDERBOLT, CHATHAM COUNTY,  
GEORGIA  
EPA ID No. GAD980803696  
TDD No. 4T-01-A-10-006

FIGURE 3 - SAMPLE LOCATION MAP

Tetra Tech EM Inc. **START**



SCALE  
1" = 24,000'



MODIFIED FROM USGS 7.5 MINUTE  
QUADRANGLE: SAVANNAH, GEORGIA.

LATEX CONSTRUCTION COMPANY  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA  
TDD No. 4T-01-10-A-006  
EPA ID No. GAD980803696

FIGURE 4 - EXTENDED SAMPLING LOCATION MAP



Tetra Tech EM Inc. **START**

**TABLE 1**  
**SURFACE SOIL SAMPLING PLAN**  
**LATEX CONSTRUCTION COMPANY**

Sample Number	Location	Rationale
LC-01-SS	Off site, north of the facility and River Road on property behind TMI office and gift shop location	Background surface soil sample for comparison to on-site sample results
LC-02-SS	On site, in grassy area west of the TMI Marina, in east-central portion of the north yard	Determine presence or absence of hazardous substances
LC-03-SS	On site, west portion of north storage yard, east of and adjacent to Building 104	Determine presence or absence of hazardous substances
LC-04-SS	On site, southern end of south yard south of hazardous waste storage area	Determine presence or absence of hazardous substances
LC-05-SS	On site, western portion of south yard, west of Building 202	Determine presence or absence of hazardous substances
LC-06-SS	On site, in sandblasting area in southeast portion of south yard	Determine presence or absence of hazardous substances
LC-07-SS	On site, eastern portion of south yard, south of Building 203	Determine presence or absence of hazardous substances
LC-08-SS	On site, northeast corner of south yard, south of and adjacent to basin	Determine presence or absence of hazardous substances
LC-09-SS	On site, in transfer pit in central portion of south storage yard	Determine presence or absence of hazardous substances

Notes: LC - Latex Construction Company  
SS - Surface soil sample

**TABLE 2**  
**SUBSURFACE SOIL SAMPLING PLAN**  
**LATEX CONSTRUCTION COMPANY**

Sample Number	Location	Rationale
LC-01-SB	Off site, north of the facility and River Road on property behind TMI office and gift shop	Background subsurface soil sample for comparison to on-site sample results
LC-02-SB	On site, in grassy area west of the TMI Marina, in east-central portion of the north yard	Determine presence or absence of hazardous substances
LC-03-SB	On site, west portion of north storage yard, east of and adjacent to Building 104	Determine presence or absence of hazardous substances
LC-04-SB	On site, southern end of south yard south of hazardous waste storage area	Determine presence or absence of hazardous substances
LC-05-SB	On site, western portion of south yard, west of Building 202	Determine presence or absence of hazardous substances
LC-06-SB	On site, in sandblasting area in southeast portion of south yard	Determine presence or absence of hazardous substances
LC-07-SB	On site, eastern portion of south yard, south of Building 203	Determine presence or absence of hazardous substances
LC-08-SB	On site, northeast corner of south yard, south of and adjacent to basin	Determine presence or absence of hazardous substances
LC-09-SB	On site, in transfer pit in central portion of south storage yard	Determine presence or absence of hazardous substances

Notes: LC - Latex Construction Company  
SB - Subsurface soil sample

**TABLE 3**  
**GROUNDWATER SAMPLING PLAN**  
**LATEX CONSTRUCTION COMPANY**

Sample Number	Location	Rationale
LC-01-GW	Off site, temporary monitoring well installed north of the facility and River Road on property behind TMI office and gift shop location	Background groundwater sample for comparison to on-site sample results
LC-02-GW	On site, previously installed monitoring well in southwest corner of the north yard, southwest corner of Building 104, west of and adjacent to the basin	Determine presence or absence of hazardous substances
LC-03-GW	On site, temporary monitoring well installed in grassy area west of the TMI Marina in the southeastern portion of the north yard	Determine presence or absence of hazardous substances
LC-04-GW	On site, previously installed monitoring well south of Building 203 in the southeast portion of the south yard	Determine presence or absence of hazardous substances
LC-06-GW	On site, temporary monitoring well installed in the sandblast area in the southeast portion of the south yard	Determine presence or absence of hazardous substances
LC-07-GW	On site, previously installed monitoring well in the western portion of the north yard between Buildings 102 and 104	Determine presence or absence of hazardous substances
LC-09-GW	On site, previously installed monitoring well in northwest portion of the south yard, northwest of Building 202	Determine presence or absence of hazardous substances
LC-01-MW	Thunderbolt Water Department Municipal Well No. 1, corner of River Road and Russell Street	Background groundwater sample for comparison to downgradient groundwater sample results
LC-02-MW	Thunderbolt Water Department Municipal Well No. 2, off Mechanics Drive, behind the police station	Determine presence or absence of hazardous substances

Notes: LC - Latex Construction Company  
 GW - Groundwater sample (collected from temporary monitoring well)  
 MW - Municipal well sample

**TABLE 4**  
**SURFACE WATER SAMPLING PLAN**  
**LATEX CONSTRUCTION COMPANY**

Sample Number	Location	Rationale
LC-01-SW	Williamson Creek, upstream of the facility	Background surface water sample for comparison to downstream sample results
LC-02-SW	Williamson Creek, adjacent to the facility, beneath a surface water runoff drainage outfall from the northwest portion of the south yard	Determine presence or absence of hazardous substances
LC-03-SW	Williamson Creek, adjacent to the facility, near the southwest corner of Building 201 and west of the hazardous waste storage area	Determine presence or absence of hazardous substances
LC-04-SW	Williamson Creek, adjacent to the facility, approximately 10 feet from a surface water runoff drainage outfall from the southern portion of the south yard, south of the sandblast area	Determine presence or absence of hazardous substances
LC-05-SW	Confluence of Williamson Creek and the Wilmington River, on the south bank of Williamson Creek	Determine presence or absence of hazardous substances
LC-06-SW	Confluence of Grays Creek and the Wilmington River, adjacent to an island used by USACE and TMI for disposal of dredge material from the basin, Williamson Creek, and the Wilmington River	Control surface water sample for comparison to downstream sample results
LC-07-SW	Wilmington River, upstream of the facility	Background surface water sample for comparison to downstream sample results
LC-08-SW	On site, west-central portion of basin	Determine presence or absence of hazardous substances
LC-09-SW	On site, east-central portion of basin	Determine presence or absence of hazardous substances
LC-10-SW	Wilmington River, adjacent to on- site basin	Determine presence or absence of hazardous substances
LC-11-SW	Wilmington River, downstream of Williamson Creek confluence with the Wilmington River	Determine presence or absence of hazardous substances

Notes:      LC      -      Latex Construction Company  
                 SW      -      Surface water sample

**TABLE 5**  
**SEDIMENT SAMPLING PLAN**  
**LATEX CONSTRUCTION COMPANY**

Sample Number	Location	Rationale
LC-01-SD	Williamson Creek, upstream of the facility	Control sample for comparison to downgradient sample results
LC-02-SD	Williamson Creek, adjacent to the facility, beneath a surface water runoff drainage outfall from the northwest portion of the south yard	Determine presence or absence of hazardous substances
LC-03-SD	Williamson Creek, adjacent to the facility, near the southwest corner of Building 201 and west of the hazardous waste storage area	Determine presence or absence of hazardous substances
LC-04-SD	Williamson Creek adjacent to the facility, approximately 10 feet from a surface water runoff drainage outfall from the southern portion of the south yard, south of the sandblast area	Determine presence or absence of hazardous substances
LC-05-SD	Confluence of Williamson Creek and the Wilmington River, on the south bank of Williamson Creek	Determine presence or absence of hazardous substances
LC-06-SD	Confluence of Grays Creek and the Wilmington River, adjacent to an island used by USACE and TMI for disposal of dredge material from the basin, Williamson Creek, and the Wilmington River	Control sample for comparison to downgradient sample results
LC-07-SD	Wilmington River, upstream of the facility	Determine presence or absence of hazardous substances
LC-08-SD	On site, west-central portion of basin	Determine presence or absence of hazardous substances
LC-09-SD	On site, east-central portion of basin	Determine presence or absence of hazardous substances
LC-10-SD	Wilmington River, adjacent to on- site basin	Determine presence or absence of hazardous substances
LC-11-SD	Wilmington River, downstream of Williamson Creek confluence with the Wilmington River	Determine presence or absence of hazardous substances

Notes: LC - Latex Construction Company  
SD - Sediment sample

### **3.2 ANALYTICAL SUPPORT AND METHODOLOGY**

All organic and inorganic samples collected during the ESI were analyzed through the EPA Contract Laboratory Program (CLP) for target compound list volatile organic compounds, semivolatile organic compounds, pesticides, polychlorinated biphenyls (PCB), and target analyte list inorganic substances (metals and cyanide). EPA Region 4 SESD reviewed all data for compliance with terms of the CLP. A complete set of analytical data sheets is presented in Appendix A.

### **3.3 ANALYTICAL DATA QUALITY AND DATA QUALIFIERS**

All analytical data were subjected to a quality assurance review by EPA. In the text and analytical data tables presented in this report, some concentrations of the organic and inorganic parameters have been reported with a "J" qualifier, indicating that the qualitative analysis was acceptable; however, the quantitative value has been estimated. Other compounds may have been reported with an "N" qualifier, indicating that they were detected based on the presumptive evidence of their presence. This means that the compound was only tentatively identified, and its detection cannot be considered a positive indication of its presence. Results for some samples are reported with a "U" qualifier, meaning that an analysis was done; however, the constituent was not detected. The reported number is the laboratory-derived sample minimum quantitation limit (SQL) for the constituent in that sample. Sample results reported with an "R" qualifier indicate that the data are unusable. At times, miscellaneous organic compounds that do not appear on the target compound list are reported with the data set. These constituents are reported with a "JN" qualifier, indicating that they are tentatively identified at estimated quantities. An analysis for these constituents is not routinely conducted or reported, so background levels or SQLs are not generally available for comparison. Concentrations of constituents qualified with an "N," "JN," or "R" are not evaluated as elevated or significantly higher than background or used for HRS scoring purposes. The complete set of analytical data sheets is presented in Appendix A.

## 4.0 SOURCE SAMPLING

This section discusses the source areas evaluated at the site, and the sampling locations and analytical results for samples collected from these areas. The source evaluated at the site for this ESI is minimal amounts of contaminated soil at several discontinuous locations throughout the facility property; most of the facility is covered with asphalt. All sampling locations are illustrated on Figure 3 and described in Tables 1 through 5. Surface soil inorganic and organic analytical results are summarized in Tables 6 and 7, respectively. Subsurface soil inorganic and organic analytical sampling results are summarized in Tables 8 and 9, respectively. Tables 6 through 9 are presented following Section 4.2. Elevated concentrations of constituents are shaded in the tables. As specified in the HRS Final Rule, the concentration of a constituent is considered to be significant or elevated if it is greater than or equal to three times the concentration detected in the background or control sample and greater than the SQL for that particular sample. In cases where a constituent is not detected in the background or control sample, any concentration equal to or greater than the SQL is considered to be elevated. The complete set of analytical data sheets is presented in Appendix A.

The following discussion of hazardous constituents detected at elevated levels in samples collected at the site includes only those hazardous constituents that are attributable to site operations and that may pose a threat to human health or the environment.

### 4.1 SOURCE SAMPLE LOCATIONS AND ANALYTICAL RESULTS

START personnel collected a total of nine surface soil samples and nine subsurface soil samples. Surface soil and subsurface soil sampling locations were described in Tables 1 and 2, and are illustrated on Figure 3. The background surface and subsurface soil samples (LC-01-SS and LC-01-SB) were collected from an undisturbed off-site location north of River Road and the facility (Ref. 12, pp. 41, 42). Surface and subsurface soil samples LC-02-SS and LC-02-SB were collected from an area of minor stressed vegetation in the eastern side of the north yard adjacent to the TMI Marina (Ref. 36, p. 2). Surface and subsurface soil samples LC-03-SS and LC-03-SB were collected adjacent to Building 104 in the east-central portion of the north yard (Ref. 12, p. 10). Surface and subsurface soil samples LC-04-SS and LC-04-SB were collected from the southern end of the south yard, south of the former hazardous waste storage area (Ref. 12, pp. 40, 41). Surface and subsurface soil samples LC-05-SS and LC-05-SB were collected adjacent to warehouse Building 201 located in the east-central portion of the south yard (Ref. 36, pp. 9, 10). Surface and subsurface soil samples LC-06-SS and LC-06-SB were collected from the sandblasting area in the southern

portion of the south yard. Black sandblasting grit was observed spilling from several bags of Black Beauty sandblasting grit stored in stacked rail cars in the sandblast area. The same black sandblasting grit was noted in sampling locations LC-06-SS and LC-06-SB and in a large pile covered by a blue tarp in the sandblasting area. In addition, a diesel odor was noted in the soil when personnel collected surface and subsurface soil samples LC-06-SS and LC-06-SB (Ref. 12, p. 17; 36, pp. 10 - 12; also see Appendix B, pp. B-6, B-7). Surface and subsurface soil samples LC-07-SS and LC-07-SB were collected adjacent to the fenceline located behind Building 203 in the southeast portion of the south yard (Ref. 12, pp. 14, 15). Surface and subsurface soil samples LC-08-SS and LC-08-SB were collected from the southeast corner of the south yard adjacent to the southeast corner of the basin (Ref. 12, p. 41). Surface and subsurface soil samples LC-09-SS and LC-09-SB were collected from the transfer pit located in the central portion of the south yard (Ref. 12, pp. 5, 6).

Several inorganic constituents were detected at elevated concentrations in on-site surface soil samples, including antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, silver, vanadium, and zinc (see Table 6). Antimony was detected in four on-site surface soil samples at concentrations ranging from 2.1J milligrams per kilogram (mg/kg) to 11J mg/kg. Arsenic was detected in one surface soil sample at 29 mg/kg. Barium was detected in four surface soil samples at concentrations ranging from 290J mg/kg to 790 mg/kg. Cadmium was detected in one surface soil sample at 0.77 mg/kg and in two surface soil samples at 0.99 mg/kg. Chromium was detected in seven on-site surface soil samples at concentrations ranging from 22 mg/kg to 110J mg/kg. Cobalt was detected in seven surface soil samples at concentrations ranging from 2.2J mg/kg to 11J mg/kg. Copper also was detected in seven surface soil samples at concentrations ranging from 190J mg/kg to 13,000 mg/kg. Lead was detected in one surface soil sample at 370J mg/kg and in two surface soil samples at 340J mg/kg. Manganese was detected in two surface soil samples at 260J mg/kg and 330J mg/kg, and mercury was detected in one surface soil sample at 2.4 mg/kg. Nickel was detected in five surface soil samples at concentrations ranging from 14J mg/kg to 37J mg/kg. Silver was detected in two surface soil samples at 2.0 mg/kg and 2.1 mg/kg. Vanadium was detected in three surface soil samples at 17J mg/kg, 23J mg/kg, and 41 mg/kg. Zinc was detected in two surface soil samples at 1,400 mg/kg and 1,800 mg/kg.

Several inorganic constituents also were detected at elevated concentrations in on-site subsurface soil samples, including antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, silver, vanadium, zinc, and cyanide (see Table 8). Antimony was detected in three subsurface soil samples at 1.4J mg/kg, 2.1J mg/kg, and 3.5J mg/kg. Arsenic was detected in one subsurface soil sample at 71 mg/kg. Barium was detected in four subsurface soil samples at concentrations

ranging from 30J mg/kg to 91J mg/kg. Beryllium was detected in two subsurface soil samples at 0.81J mg/kg and 1.6J mg/kg, and cadmium was detected in two subsurface soil samples at 0.20 mg/kg and 0.29 mg/kg. Chromium was detected in three subsurface soil samples at 56J mg/kg, 57 mg/kg, and 170J mg/kg. Cobalt was detected in seven subsurface soil samples at concentrations ranging from 0.65J mg/kg to 20J mg/kg. Copper was detected in all eight on-site subsurface soil samples at concentrations ranging from 3.8J mg/kg to 1,000J mg/kg. Lead was detected in three subsurface soil samples at 71J mg/kg, 760J mg/kg, and 780J mg/kg. Manganese was detected in seven subsurface soil samples at concentrations ranging from 14J mg/kg to 160J mg/kg. Nickel was detected in three subsurface soil samples at 8.1J mg/kg, 86J mg/kg, and 100J mg/kg. Silver also was detected in three subsurface soil samples at 0.39 mg/kg, 1.0 mg/kg, and 1.1 mg/kg. Vanadium was detected in three subsurface soil samples at 11 mg/kg, 12J mg/kg, and 17 mg/kg. Zinc was detected in five subsurface soil samples at concentrations ranging from 28J mg/kg to 1,600 mg/kg. Cyanide was detected in four subsurface soil samples at concentrations ranging from 1.7J mg/kg to 8.7J mg/kg.

Several organic constituents were detected at elevated levels in on-site surface soil samples, including acetone, benzaldehyde, naphthalene, dimethyl phthalate, fluorene, phenanthrene, anthracene, bi-n-butylphthalate, fluoranthene, pyrene, benzyl butyl phthalate, benzo(a)anthracene, bis(2-ethylhexyl) phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, and PCB-1254. The pesticides endosulfan II and methoxychlor also were detected in on-site surface soil samples; however, they may be present due to the routine application of pesticides and may not be attributable to on-site operations (see Table 7).

Acetone was detected at 43 micrograms per kilogram ( $\mu\text{g/kg}$ ), and bis(2-ethylhexyl)phthalate was detected at 5,300  $\mu\text{g/kg}$  in surface soil sample LC-09-SS collected from the transfer pit. Numerous extractable organic constituents were detected in surface soil sample LC-04-SS collected south of the sandblast area and hazardous waste storage area, including benzaldehyde (2,900J  $\mu\text{g/kg}$ ), naphthalene (2,800  $\mu\text{g/kg}$ ), fluorene (2,100  $\mu\text{g/kg}$ ), phenanthrene (7,600  $\mu\text{g/kg}$ ), anthracene (1,900  $\mu\text{g/kg}$ ), fluorene (5,400  $\mu\text{g/kg}$ ), pyrene (8,200  $\mu\text{g/kg}$ ), benzyl butyl phthalate (2,000  $\mu\text{g/kg}$ ), benzo(a)anthracene (3,100  $\mu\text{g/kg}$ ), bis(2-ethylhexyl)phthalate (4,800  $\mu\text{g/kg}$ ), benzo(b)fluoranthene (2,000  $\mu\text{g/kg}$ ), and benzo(b)fluoranthene (2,800  $\mu\text{g/kg}$ ). Three extractable organic constituents were detected at elevated levels in surface soil sample LC-08-SS collected from the northeast corner of the south yard adjacent to the basin; these constituents included dimethyl phthalate (16,000  $\mu\text{g/kg}$ ), di-n-butylphthalate (6,600  $\mu\text{g/kg}$ ), and benzyl butyl phthalate (4,200  $\mu\text{g/kg}$ ). PCBs were detected at elevated levels in two surface soil samples: PCB-1254 was detected at 72  $\mu\text{g/kg}$  in surface soil sample LC-03-SS collected from the north yard east of and adjacent to building 104 and at 70  $\mu\text{g/kg}$  in surface soil sample LC-09-SS collected from the transfer pit in the south yard.

Several organic constituents also were detected at elevated levels in on-site subsurface soil samples, including acetone, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo-a-pyrene, and PCB-1248. The pesticides aldrin and dieldrin also were detected at elevated levels in subsurface soil samples; however, their presence may be due to the routine application of pesticides and may not be attributable to on-site operations (see Table 9). Acetone was detected at 21J µg/kg in subsurface soil sample LC-09-SB collected from the transfer pit. Several extractable organic constituents were detected in subsurface soil sample LC-02-SB collected from the eastern portion of the north yard in a grassy area adjacent to the TMI Marina, including pyrene (690 µg/kg), benzo(a)anthracene (440 µg/kg), chrysene (1,800 µg/kg), benzo(b)fluoranthene (1,000 µg/kg), benzo(k)fluoranthene (1,000 µg/kg), and benzo-a-pyrene (710 µg/kg). PCB-1248 was detected at 760 µg/kg in subsurface soil sample LC-04-SB collected from the southern edge of the south yard south of the sandblast and hazardous waste storage areas.

## **4.2 SOURCE CONCLUSIONS**

Because most of the facility is covered with asphalt, the source evaluated at the site for this ESI is minimal amounts of contaminated soil at several discontinuous locations throughout the facility property.

Several inorganic constituents were detected at elevated concentrations in on-site surface and subsurface soil samples, including antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, silver, vanadium, and zinc. Mercury was also detected at elevated levels in on-site surface soil samples, and beryllium and cyanide were detected at elevated levels in on-site subsurface soil samples.

Several organic constituents were detected at elevated levels in on-site surface soil samples, including acetone, benzaldehyde, naphthalene, dimethyl phthalate, fluorene, phenanthrene, anthracene, bi-n-butylphthalate, fluoranthene, pyrene, benzyl butyl phthalate, benzo(a)anthracene, bis(2-ethylhexyl) phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, and PCB-1254. Acetone, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, and benzo(k)fluoranthene were also detected at elevated levels in on-site subsurface soil samples, along with benzo-a-pyrene, chrysene, and PCB-1248.

**TABLE 6**  
**SUMMARY OF INORGANIC ANALYTICAL RESULTS**  
**SURFACE SOIL SAMPLES**

ANALYTE (mg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SS	LC-02-SS	LC-03-SS	LC-04-SS	LC-05-SS	LC-06-SS	LC-07-SS	LC-08-SS	LC-09-SS
<b>Metals</b>									
Aluminum	2,300	4,800J	2,100J	9,500J	4,200J	5,000J	5,100J	9,200	3,600J
Antimony	1.0UJ	--	0.90J	--	1.1J	--	2.3J	6.2J	2.1J
Arsenic	1.7U	--	--	--	--	--	--	--	29
Barium	53	15J	52J	670J	95J	120J	290J	790	390J
Beryllium	0.09UR	--	--	--	--	--	--	--	--
Cadmium	0.45U	--	0.99	--	--	--	--	0.99	0.77
Calcium	6,100J	1,500J	620J	59,000J	1,400J	3,100J	4,100J	10,000J	22,000J
Chromium	6.1J	6.5	29	42	67	22	25	110J	68
Cobalt	0.71J	1.3J	2.2J	3.8J	4.4J	4.4J	2.8J	1.1J	8.2J
Copper	41	7.3J	190J	920J	1,700J	490J	310J	13,000	1,900J
Iron	3,100	2,800J	9,200J	11,000J	26,000J	7,400J	8,600J	19,000	35,000J
Lead	96J	10J	210J	70J	370J	92J	64J	340J	340J
Magnesium	640J	420J	220J	2,200J	580J	700J	1,000J	3,400J	2,400J
Manganese	68J	32J	100J	110J	140J	58J	93J	260J	330J
Mercury (Total)	0.22	--	2.4	--	0.36	--	--	--	--
Nickel	2.6J	--	--	14J	35J	18J	--	37J	36J
Potassium	390J	280J	190J	750J	450J	570J	710J	2,800J	720J
Silver	0.29U	--	0.65	--	2.1	--	--	0.88	2.0
Sodium	280J	--	410	1,300	400	600	390J	1,300	1,600
Vanadium	4.9	7.4J	5.1J	23J	10J	13J	17J	41	10J
Zinc	330	30J	540	600J	350J	350J	350J	1,800	1,400
Cyanide	0.64J	1.2J	--	--	1.3J	--	--	--	1.4J

Notes: mg/kg Milligrams per kilogram  
 LC Latex Construction Company  
 SS Surface soil sample  
 U Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit  
 J Estimated value  
 -- Constituent analyzed for but not detected

Shaded areas indicate elevated concentrations of constituents

**TABLE 7**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SURFACE SOIL SAMPLES**

ANALYTE (µg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SS	LC-02-SS	LC-03-SS	LC-04-SS	LC-05-SS	LC-06-SS	LC-07-SS	LC-08-SS	LC-09-SS
<b>Volatiles</b>									
Acetone	12U	--	--	--	--	--	--	--	43
<b>Miscellaneous Volatile Compounds<sup>a</sup></b>									
Cyclotetrasiloxane, Octameth	1,000J								
Unknown siloxane/No.	84J		160J/2		92J	250J	330J/2	260J/2	
<b>Extractables</b>									
Benzaldehyde	1,800UJ	--	--	2,900J	--	--	--	3,600J	--
Phenol	1,800U	--	--	--	--	--	--	400J	--
2-Methylphenol	1,800U	--	--	--	--	--	--	--	220J
Acetophenone	1,800U	--	--	--	--	--	--	1,200J	--
Naphthalene	1,800U	--	--	2,800	--	--	--	--	--
2-Methylnaphthalene	1,800U	--	--	850J	--	--	--	--	--
1,1-Biphenyl	1,800U	--	--	230J	--	--	--	--	--
Dimethyl phthalate	1,800U	--	--	--	--	--	--	16,000	--
Acenaphthene	1,800U	--	--	1,400J	--	110J	--	--	--
Dibenzofuran	1,800U	--	--	1,400J	--	--	--	--	--
Fluorene	1,800U	--	--	2,100	--	--	--	--	--

**TABLE 7 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SURFACE SOIL SAMPLES**

ANALYTE (µg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SS	LC-02-SS	LC-03-SS	LC-04-SS	LC-05-SS	LC-06-SS	LC-07-SS	LC-08-SS	LC-09-SS
Phenanthrene	1,800U	--	200J	7,600	830J	480J	430J	790J	1,100J
Anthracene	1,800U	--	--	1,900	--	--	--	--	--
Carbazole	1,800U	--	--	1,700J	--	--	--	--	--
Di-n-butylphthalate	1,800U	--	--	--	--	--	--	6,600	--
Fluoranthene	400J	--	500J	5,400	1,400J	840	850J	1,600J	1,700J
Pyrene	360J	--	460J	8,200	1,300J	740	740J	1,400J	1,500J
Benzyl butyl phthalate	1,800U	--	--	2,000	--	--	--	4,200	--
Benzo(a)anthracene	1,800U	--	240J	3,100	490J	400J	370J	490J	580J
Chrysene	290J	--	350J	1,700J	740J	510J	480J	1,100J	960J
Bis(2-ethylhexyl)phthalate	1,800U	--	--	4,800	--	--	--	--	5,300
Benzo(b)fluoranthene	190J	--	330J	2,000	580J	410J	470J	540J	950J
Benzo(k)fluoranthene	1,800U	--	280J	2,800	590J	440J	360J	690J	650J
Benzo-a-pyrene	1,800U	--	--	--	--	--	--	--	640J
Indeno(1,2,3-cd)pyrene	1,800U	--	--	520J	390J	280J	270J	390J	530J
Dibenzo(a,h)anthracene	1,800U	--	--	190J	--	120J	--	--	--
Benzo(ghi)perylene	1,800U	--	--	370J	390J	270J	300J	390J	520J

**TABLE 7 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SURFACE SOIL SAMPLES**

ANALYTE (µg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SS	LC-02-SS	LC-03-SS	LC-04-SS	LC-05-SS	LC-06-SS	LC-07-SS	LC-08-SS	LC-09-SS
<b>Miscellaneous Extractable Compounds*</b>									
Unknowns/No.	61,000J/17	7,300J/16	3,400J	21,000J/14	1,700J	5,200J/5	5,400J/5	52,000J/13	5,800J/5
1,3-Benzodioxole, 5- (2-prope	980NJ								
1,4-Methanoazulene, decahydr	3,500NJ								
Thujopsene	600NJ								
Benzene, 1-methyl-4- (1,2,2-t	650NJ								
Cyclohexanemethanol, 4-ethen	2,800NJ								
Cedrol	1,600NJ								
Hexadecanoic acid, methyl es	570NJ								
Hexadecanoic acid	1,600NJ	320NJ		1,700NJ					
Phenanthrene, 1,2,3,4,4A, 9,1	700NJ								
1-Docosanol	2,200NJ								
Furo [3',4'6,7] naphtho [2,3-D	5,400NJ								
Unknown steroids/No.	15,000JN/2	200JN							
Unknown amide		330JN							
1-Octadecene		190NJ							
.Gamma.-sitosterol		480NJ							

**TABLE 7 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SURFACE SOIL SAMPLES**

ANALYTE (µg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SS	LC-02-SS	LC-03-SS	LC-04-SS	LC-05-SS	LC-06-SS	LC-07-SS	LC-08-SS	LC-09-SS
Alpha-pinene				1,600NJ					
Bicyclo[2.2.1]heptan-2-ol, 1				1,000NJ					
Bicyclo[2.2.1]heptan-2-one				1,400NJ					
3-Cyclohexen-1-ol, 4-methyl-				2,200NJ					
Phenol, p-tert-butyl-				1,500NJ			720NJ		470NJ
Benzaldehyde, 3-hydroxy-4-me				920NJ					
Carpyophyllene				1,500NJ					
Stannane, chlorotris (2-methy				1,600NJ					970NJ
9, 10-Anthracenedione				510NJ					
1-Phenanthrenecarboxylic acid				510NJ					
Limonene						200NJ			
Stannane, bromotributyl-						240NJ			
Phenanthrene, 2,5-dimethyl-						170NJ			
11H-benzo[b]fluorene						240NJ			
Pyrene, 2-methyl-						170NJ			
Phosphoric acid, tris (2-meth						240NJ			

**TABLE 7 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SURFACE SOIL SAMPLES**

ANALYTE (µg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SS	LC-02-SS	LC-03-SS	LC-04-SS	LC-05-SS	LC-06-SS	LC-07-SS	LC-08-SS	LC-09-SS
Benzo[a]pyrene						410NJ			
Phenol, nonyl-							790NJ		
Unknown phthalate							460J	2,500J	
Unknown PAH							420JN		
Benzyl alcohol								1,500NJ	
Triethyl phosphate								820NJ	
Benzoic acid								3,500NJ	
Phenol, m-tert-butyl-								1,600NJ	
Phthalic anhydride								4,000NJ	
1 (3h) - Isobenzofuranone								1,100NJ	
Dodecanoic acid								890NJ	
Stannane, tributylchloro-								11,000NJ	
Stannane, bromodibutyl (1-met								2,100NJ	
Benzo[j]fluoranthene									770NJ
Benzene, 1-methyl-2-[(3-meth									1,500NJ
Stannane, bromotributyl-									540NJ
Phosphoric acid, tris (Methyl - (2 isomers)									1,700JN

**TABLE 7 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SURFACE SOIL SAMPLES**

ANALYTE (µg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SS	LC-02-SS	LC-03-SS	LC-04-SS	LC-05-SS	LC-06-SS	LC-07-SS	LC-08-SS	LC-09-SS
<b>Pesticides/PCBs</b>									
Dieldrin	3.7U	--	12N	--	--	4.9N	--	--	14N
Endosulfan II (Beta)	3.7U	--	--	--	23J	--	--	--	--
4,4'-DDT (P,P'-DDT)	3.7U	--	--	--	13NJ	--	--	5.2N	--
Methoxychlor	19U	--	--	--	90J	--	--	--	--
Endrin ketone	6.3N	--	--	--	--	--	--	8.5N	--
Endrin aldehyde	3.7U	--	--	--	--	--	--	--	5.2N
Alpha-Chlordane /2	2.6	--	--	--	--	--	--	2.9	--
Gamma-Chlordane /2	6.7	--	3.4	--	2.0J	--	--	2.1N	--
PCB-1254 (Aroclor 1254)	37U	--	72	--	--	--	--	--	70

Notes:

- µg/kg Micrograms per kilogram
- LC Latex Construction Company
- SS Surface soil sample
- U Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit
- J Estimated value
- Constituent analyzed for but not detected
- N Presumptive evidence of presence of material
- N/A Not analyzed
- PAH Polyaromatic hydrocarbons
- PCB Polychlorinated biphenyls
- <sup>a</sup> Miscellaneous compounds are not on the target compound list and are reported only as detected in individual samples; SQL not provided

Shaded areas indicate elevated concentrations of constituents

**TABLE 8**  
**SUMMARY OF INORGANIC ANALYTICAL RESULTS**  
**SUBSURFACE SOIL SAMPLES**

ANALYTE (mg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SB	LC-02-SB	LC-03-SB	LC-04-SB	LC-05-SB	LC-06-SB	LC-07-SB	LC-08-SB	LC-09-SB
<b>Metals</b>									
Aluminum	6,100	5,700J	2,500J	6,200	760J	4,900J	2,800J	3,900	4,000J
Antimony	0.73UJ	--	--	3.5J	--	2.1J	--	1.4J	--
Arsenic	0.86U	--	--	--	--	--	--	7J	--
Barium	5.5	30J	14J	85	7.8J	91J	12J	67	10J
Beryllium	0.09UR	--	--	1.6J	--	0.81J	--	--	--
Cadmium	0.09U	--	--	0.29	--	--	--	0.20	--
Calcium	280J	2,900J	460J	8,700J	3,500J	4,600J	1,400J	87,000J	9,700J
Chromium	5.9J	11	3.8	56J	2.8	57	6.0	170J	9.0
Cobalt	0.45UJ	2.3J	--	15J	0.65J	20J	1.4J	1.4J	1.3J
Copper	1.5U	5.6J	3.8J	880	9.5J	11,000J	7.6J	370	13J
Iron	1,600	7,700J	1,300J	22,000	1,100J	20,000J	3,600J	6,800	4,200J
Lead	13J	19J	7.0J	780	2.9J	760J	9.4J	71J	6.9J
Magnesium	90UJ	910J	130J	930J	120J	710J	480J	1,900J	1,200J
Manganese	3.7J	26J	16J	160J	14J	150J	32J	110J	49J
Nickel	0.73J	--	--	86J	--	100J	--	8.1J	--
Potassium	120J	1,100J	100J	1,100J	110J	520J	330J	780J	460J
Silver	0.29U	0.39	--	1.0	--	5.1	--	--	--
Sodium	260U	--	--	1,200	--	1,300	--	660	650
Vanadium	3.6	12J	2.4J	11	2.3J	9.5J	6.8J	17	10J
Zinc	9.0	20J	13J	1,600	48J	1,600J	28J	260	20J
Cyanide	0.22UJ	8.7J	2.3J	--	1.7J	--	4.6J	--	--

Notes: mg/kg Milligrams per kilogram  
 LC Latex Construction Company  
 SB Subsurface soil sample  
 U Constituent analyzed for but not detected; value reported is the sample quantitation limit  
 J Estimated value  
 -- Constituent analyzed for but not detected  
 R QC indicates that data unusable; compound may or may not be present. Resampling and reanalysis is necessary for verification.

Shaded areas indicate elevated concentrations of constituents

**TABLE 9**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SUBSURFACE SOIL SAMPLES**

ANALYTE (mg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SB	LC-02-SB	LC-03-SB	LC-04-SB	LC-05-SB	LC-06-SB	LC-07-SB	LC-08-SB	LC-09-SB
<b>Volatiles</b>									
Acetone	11U	--	--	--	--	--	--	--	21J
<b>Miscellaneous Volatile Compounds<sup>a</sup></b>									
Cyclotetrasiloxane, Octameth	410J								
Unknown siloxane/No.	56J	32J	410J/2	460J/2	400J/3	250J/2	380J/2	220J/2	
<b>Extractables</b>									
Phenanthrene	360U	140J	--	290J	--	1,100J	--	--	--
Anthracene	360U	54J	--	--	--	--	--	--	--
Fluoranthene	360U	330J	--	580J	--	1,700J	--	500J	--
Pyrene	360U	690	--	510J	--	1,500J	--	480J	--
Benzo(a)anthracene	360U	440	--	290J	--	860J	--	--	--
Chrysene	360U	1,800	--	380J	--	1,100J	--	--	--
Benzo(b)fluoranthene	360U	1,000	--	330J	--	850J	--	--	--
Benzo(k)fluoranthene	360U	1,000	--	310J	--	920J	--	--	--
Benzo-a-pyrene	360U	710	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	360U	380J	--	270J	--	570J	--	--	--
Dibenzo(a,h)anthracene	360U	140J	--	--	--	--	--	--	--
Benzo(ghi)perylene	360U	360J	--	270J	--	560J	--	--	--

**TABLE 9 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SUBSURFACE SOIL SAMPLES**

ANALYTE (mg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SB	LC-02-SB	LC-03-SB	LC-04-SB	LC-05-SB	LC-06-SB	LC-07-SB	LC-08-SB	LC-09-SB
<b>Miscellaneous Extractable Compounds*</b>									
Unknowns/No.	17,000J/17	3,100J/10	2,400J/4	21,000J/5	1,500J	4,200J/2	/5	3,700J	2,500/7
Tricyclo [5.4.0.02,8] undec-9-	100NJ								
1H-3A, 7-methanoazulene, 2,3,	100NJ								
1,4-Methano-1h-indene, octah	460NJ								
1,4-Methanoazulene, decahydr	2,000NJ								
Thujopsene	1,200NJ								
Benzene, 1-methyl-4- (1,2,3-t	1,000NJ								
Cedrol	1,500NJ								
Phenol, 2-methyl-5- (1,2,2-tr	460NJ								
Hexadecanoic acid	900NJ								
Phenanthrene, 1,2,3,4,4A,9,1	340NJ								
9,12-Octadecadienoic acid (z	580NJ								
2-Phenanthrenol, 4B,5,6,7,8, (2 isomers)	6,900JN								
Acenaphtho(1,2-b)pyridine		96NJ							
11H-benzo[a]fluorene		84NJ							
Unknown amide		89NJ	380JN	900J		1,300JN			340JN

**TABLE 9 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SUBSURFACE SOIL SAMPLES**

ANALYTE (mg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SB	LC-02-SB	LC-03-SB	LC-04-SB	LC-05-SB	LC-06-SB	LC-07-SB	LC-08-SB	LC-09-SB
Unknown PAH		83JN							
7H-benz [de] anthracene-7-one		83NJ							
Perylene		1,000NJ							
2-Propanol, 1- (2-methoxyprop			200NJ		140NJ				
Phosphoric acid, tris (methyl - (2 isomers)				2,300JN					
Phosphoric acid, tris (3-meth				1,800NJ		420 NJ			
Unknown phthalate						530J			
Phosphoric acid, tris (methyl						980NJ			
Phosphoric acid, tris (4-meth						770NJ			
Benzo [e] pyrene						2,600NJ			
Stannane, chlorotris (2-methy							72NJ		

**TABLE 9 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SUBSURFACE SOIL SAMPLES**

ANALYTE (mg/kg)	SAMPLE NUMBER								
	Background	On Site							
	LC-01-SB	LC-02-SB	LC-03-SB	LC-04-SB	LC-05-SB	LC-06-SB	LC-07-SB	LC-08-SB	LC-09-SB
<b>Pesticides/PCBs</b>									
Heptachlor	1.9U	--	--	--	--	--	--	2.1N	--
Aldrin	1.9U	--	--	19	--	--	--	6.2	--
Dieldrin	3.6U	5.3N	--	18N	--	--	--	23	--
Methoxychlor	19U	--	--	--	--	27NJ	--	--	--
Alpha-Chlordane /2	1.9U	--	--	--	--	--	--	5.2N	--
Gamma-Chlordane /2	1.9U	--	--	--	--	--	--	11N	--
PCB-1248 (Aroclor 1248)	36U	--	--	760	--	--	--	--	--
PCB-1254 (Aroclor 1254)	36U	--	--	--	--	--	19J	--	--

Notes:

- µg/kg     Milligrams per kilogram
- LC        Latex Construction Company
- SB        Subsurface soil sample
- U         Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit (SQL)
- J         Estimated value
- Constituent analyzed for but not detected
- N         Presumptive evidence of presence of material
- PAH      Polyaromatic hydrocarbons
- PCB      Polychlorinated biphenyls
- "         Miscellaneous compounds are not on the target compound list and are reported only as detected in individual samples; SQL not provided

Shaded areas indicate elevated concentrations of constituents

## **5.0 PATHWAYS**

This section discusses the groundwater migration, surface water migration, soil exposure, and air migration pathways. Additionally, this section discusses the targets associated with each pathway and draws pathway-specific conclusions. Sampling locations and analytical results for samples collected from the specific pathways are also discussed.

### **5.1 GROUNDWATER MIGRATION PATHWAY**

During the ESI, groundwater samples were collected from permanent monitoring wells and temporary monitoring wells installed on site in the surficial aquifer. Groundwater samples were also collected from the two Thunderbolt municipal wells. On-site groundwater inorganic and organic results are summarized in Tables 10 and 11, respectively. Thunderbolt municipal well inorganic results are summarized in Table 12. Tables 10 through 12 follow Section 5.1.4.

#### **5.1.1 Geologic and Hydrogeologic Setting**

The facility is located in the coastal lowlands topographic division of the Coastal Plain physiographic province of Georgia. The terrain in the coastal lowlands consists of barrier islands, marshes, level plains, and a series of terraces. Elevations in the coastal lowlands range from sea level to 100 feet above mean sea level (msl) (Ref. 37).

The geologic units that underlie the facility are, in descending stratigraphic order, unconsolidated post-Miocene-age deposits, the Hawthorn Group, the Suwannee Limestone, the Cooper Formation, the Ocala Limestone, the Gosport Sand equivalent, the Lisbon Formation, and the Tallahatta Formation (Ref. 37, p. D24). The unconsolidated post-Miocene deposits are composed of sand, gravel, clay, and marl and range from 50 to 100 feet thick in the site area. The Hawthorn Group is approximately 100 feet thick and consists of marl, clay, sand, and dolomite interbedded with phosphatic sandy clay, and sandy dolomite. The Suwannee Limestone is approximately 80 feet thick and ranges from a fossiliferous limestone to a dense calcitized unfossiliferous limestone. The Cooper Formation consists of a phosphatic sandy marl. The Ocala Limestone consists of a fossiliferous, recrystallized, porous limestone containing large solution cavities. The combined thickness of the Cooper Formation and Ocala Limestone is

approximately 350 feet. The Gosport Sand equivalent consists of calcareous sand or sandy limestone that is glauconitic at depth. The Lisbon Formation consists of glauconitic, sandy, clayey, fossiliferous marl. The Tallahatta Formation is interbedded glauconitic sand and shale that grades to a glauconitic argillaceous and sandy fossiliferous limestone. The combined thickness of the Gosport sand equivalent, the Lisbon Formation, and the Tallahatta Formation ranges from 500 to 600 feet (Ref. 37, p. D24; 38).

Two major aquifers occur in the Savannah area: a surficial aquifer system and the Floridan Aquifer system. The surficial aquifer system is composed of the unconsolidated post-Miocene-age deposits. The underlying Floridan Aquifer system is primarily composed of carbonate units that range from Oligocene to middle Eocene in age (Ref. 37, pp. D18, D23). In the Savannah area, the surficial aquifer is separated from the Floridan Aquifer system by the confining beds of the Hawthorn Group (Refs 37, p. D18; 39, p. 23).

Groundwater in the surficial aquifer is generally under unconfined conditions. The water level in this aquifer fluctuates seasonally, corresponding to seasonal variation in precipitation and evaporation. The surficial aquifer is recharged by the infiltration of rainwater and is generally in correlation with water from lakes, streams, and marshes (Ref. 37, p. D18).

The top of the Floridan Aquifer system occurs approximately 150 feet bls in the Savannah area. The Floridan Aquifer system can be divided into upper and lower permeable zones referred to as the Upper and Lower Floridan Aquifers. The Upper and Lower Floridan Aquifers are separated by a middle Eocene-age semiconfining unit. The Floridan Aquifer system is confined below the low-permeability beds that occur in the middle of the Lisbon Formation. The Upper Floridan Aquifer consists of permeable beds of the Suwannee Limestone, Cooper Formation, and the Ocala Limestone. The Upper Floridan Aquifer is approximately 500 to 600 feet thick. In the Savannah area, the Upper Floridan Aquifer consists primarily of three permeable zones separated by locally confining units. The Lower Floridan Aquifer consists of permeable beds in the Gosport Sand equivalent and part of the Lisbon Formation. The Lower Floridan Aquifer is approximately 200 feet thick. In the site area, the Lower Floridan Aquifer responds to pumping from the Upper Floridan Aquifer. This response is indicated by the similarity, over time, of water levels observed in the Upper and Lower Floridan Aquifers. This suggests that the Upper and Lower Floridan Aquifers are hydrologically connected in the area (Refs. 37; 38).

### 5.1.2 Groundwater Sampling Locations and Analytical Results

START personnel collected a total of 10 groundwater samples. Groundwater samples LC-02-GW, LC-04-GW, LC-07-GW, and LC-09-GW were collected from permanent on-site monitoring wells installed in the surficial aquifer during the McLaren September 1988 property transaction environmental assessment and verification sampling (Refs. 9; 11; 36). Lithologic logs and well construction details were presented as Appendix B of the McLaren February 1989 property transaction, excavation, and verification sampling report (Ref. 14, App. B).

Groundwater samples LC-03-GW and LC-06-GW were collected from temporary groundwater monitoring wells installed on site in the surficial aquifer during the ESI sampling investigation (Ref. 36, pp. 16 - 18, 23 - 30). The temporary monitoring well installed at sampling location LC-03-GW was installed in the southeast corner of the north yard, east of two aboveground storage tanks and near underground gas lines leading to the TMI Marina. A gray material with a petroleum odor was encountered while the well was being installed. A diesel odor was noted in the soil and water at this location (Ref. 36, pp. 23 - 25, 27, 30). The temporary monitoring well installed at sampling location LC-06-GW was installed in the sandblasting location where surface and subsurface soil samples LC-06-SS and LC-06-SB were collected. Black sandblasting grit was observed at this location. Personnel noted an oily sheen and a diesel odor while purging the well prior to collecting the groundwater sample (Ref. 36, p. 17). Two groundwater samples (LC-01-MW and LC-02-MW) were also collected from the two nearby Thunderbolt municipal wells installed in the Floridan Aquifer (Ref. 12, pp. 1 - 4).

The background groundwater sample (LC-01-GW) collected for comparison to on-site surficial groundwater samples was collected from a temporary monitoring well installed during the ESI sampling investigation in an undisturbed off-site location north of River Road and the facility (Ref. 12, pp. 33 - 36, 41, 42). The background groundwater sample (JS-08-DW) collected for comparison to off-site Floridan municipal well groundwater samples was collected from a City of Savannah municipal well at an upgradient location (Ref. 40). Groundwater sampling locations are described in Table 3, and are illustrated on Figure 3. On-site inorganic and organic groundwater sampling results are described in Tables 10 and 11, respectively. Off-site Thunderbolt municipal well inorganic groundwater sampling results are described in Table 12. Tables 10 through 12 follow section 5.1.3.

Several inorganic constituents were detected at elevated levels in both permanent and temporary monitoring wells installed on site in the surficial aquifer, including barium, beryllium, cadmium, chromium, copper, lead, manganese, vanadium, and zinc (see Table 10). Barium was detected in all six on-site groundwater samples at concentrations ranging from 12J micrograms per liter ( $\mu\text{g/L}$ ) to 160  $\mu\text{g/L}$ . Beryllium was detected at 0.70  $\mu\text{g/L}$  in only one on-site groundwater sample (LC-02-GW). Cadmium was detected at 10  $\mu\text{g/L}$  in sample LC-04-GW and chromium was detected at 16  $\mu\text{g/L}$  in sample LC-06-GW. Copper was detected at 330  $\mu\text{g/L}$  in sample LC-06-GW and at 120  $\mu\text{g/L}$  in sample LC-09-GW. Lead was detected at 86J  $\mu\text{g/L}$  in sample LC-06-GW and at 7.6J  $\mu\text{g/L}$  in sample LC-09-GW. Manganese was detected in all six on-site groundwater samples at concentrations ranging from 55J  $\mu\text{g/L}$  to 720J  $\mu\text{g/L}$ . Vanadium was detected in three on-site groundwater samples at 27  $\mu\text{g/L}$  in sample LC-04-GW, 16  $\mu\text{g/L}$  in sample LC-06-GW, and 15  $\mu\text{g/L}$  in sample LC-09-GW. Zinc was detected in three on-site groundwater samples at 85  $\mu\text{g/L}$  in sample LC-04-GW, 300  $\mu\text{g/L}$  in sample LC-06-GW, and 97  $\mu\text{g/L}$  in sample LC-09-GW.

Several organic constituents were detected at elevated levels in on-site groundwater samples, including methyl t-butyl ether, cyclohexane, methylcyclohexane, isopropylbenzene, n-propylbenzene, sec-butylbenzene, n-butylbenzene, and caprolactam. However, methyl t-butyl ether, cyclohexane, methylcyclohexane, isopropylbenzene, n-propylbenzene, sec-butylbenzene, n-butylbenzene, and caprolactam were not detected in on-site soil samples. Methyl t-butyl ether was detected at 4.4  $\mu\text{g/L}$  in groundwater sample LC-06-GW collected from the sandblast area, and at 2.2  $\mu\text{g/L}$  in groundwater sample LC-09-GW collected from the west-central portion of the south yard, just north of Building 202. Several volatile organic constituents were detected at elevated levels in the groundwater sample (LC-03-GW) collected from the temporary monitoring well installed in the eastern portion of the north yard, west of and adjacent to the TMI Marina. Cyclohexane was detected at 2.0  $\mu\text{g/L}$ , and methylcyclohexane was detected at 3.0  $\mu\text{g/L}$ . Isopropylbenzene was detected at 7.6  $\mu\text{g/L}$ , and n-propylbenzene was detected at 13  $\mu\text{g/L}$ . Sec-butylbenzene was detected at 3.9  $\mu\text{g/L}$ , and n-butylbenzene was detected at 3.8  $\mu\text{g/L}$ . Caprolactam was the only extractable organic constituent detected in on-site groundwater samples. Caprolactam was detected at 49  $\mu\text{g/L}$  and 110  $\mu\text{g/L}$  in groundwater samples collected from on-site permanent monitoring wells. No inorganic constituents of concern or organic constituents were detected at elevated levels in the off-site Thunderbolt municipal wells (see Tables 12 and 13).

### **5.1.3 Groundwater Targets**

Residents within a 4-mile radius of the facility obtain potable drinking water primarily from the Savannah Water and Sewer Bureau and the town of Thunderbolt (Refs. 1; 41; 42). Municipal water systems within a 4-mile radius of the facility obtain potable water from groundwater wells completed in the Floridan Aquifer (Refs. 42; 42; 43). The Savannah Water and Sewer Bureau provides potable water from seven individual water systems to 186,315 people. The Savannah Main system provides water obtained from 22 wells to 156,072 people. The Wilmington Island system provides water obtained from four wells to 10,338 people. The Whitmarsh Island system provides water obtained from three wells to 3,489 people. The Dutch Island system provides water obtained from three wells to 824 people. The Georgetown-Gateway system provides water obtained from four wells to 1,001 persons. The Savannah Quarters system provides water obtained from two wells to 1,186 persons. The Travis system provides water obtained from three wells to 10,619 people (Refs. 1; 42, pp. 1 - 6). The town of Thunderbolt provides potable water obtained from two wells to 2,786 people (Refs. 1; 42, p. 2). A total of 76,116 persons obtain potable water from municipal wells located within 4 miles of the facility (Refs. 41; 42). The distribution of municipal drinking water wells within 4 miles of the facility and the population served is provided in Table 13.

### **5.1.4 Groundwater Conclusions**

Although several inorganic and organic constituents were detected in on-site groundwater samples collected from permanent and temporary monitor wells installed in the surficial aquifer, no known targets located within a 40-mile radius of the facility obtain potable drinking water from the surficial aquifer. The surficial aquifer is not a good source for potable water. Furthermore, in the Savannah area the surficial aquifer is separated from the Floridan Aquifer system by the confining beds of the Hawthorn Group in the Savannah area.

The groundwater migration pathway is of some concern due to the presence of numerous municipal wells within 4 miles of the facility. However, no inorganic constituents of concern or organic constituents were detected at elevated levels in the groundwater samples collected from the two Thunderbolt municipal wells completed in the Floridan Aquifer. A total of 76,116 persons obtain potable water from municipal wells installed in the Floridan Aquifer within 4 miles of the facility.

**TABLE 10**  
**SUMMARY OF INORGANIC ANALYTICAL RESULTS**  
**ON-SITE GROUNDWATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER						
	Background	On Site					
	LC-01-GW	LC-02-GW	LC-03-GW	LC-04-GW	LC-06-GW	LC-07-GW	LC-09-GW
<b>Metals</b>							
Aluminum	1,700	490	1,600J	--	2,900	620J	435
Barium	10U	76	12J	36	160	55J	140
Beryllium	0.40U	0.70	--	--	--	--	--
Cadmium	0.40U	--	--	10	--	--	--
Calcium	39,000J	240,000J	190,000	170,000J	190,000J	170,000J	90,000J
Chromium	2.8U	--	--	--	16	--	--
Copper	16	4.0	--	11	330	--	120
Iron	250U	1,400	12,000J	6,200	6,000	5,600J	4,100
Lead	2.7UJ	--	--	--	86J	--	7.6J
Magnesium	4,600	540,000	30,000J	33,000	120,000	11,000J	110,000
Manganese	5.9J	120J	290J	470J	720J	55J	130J
Nickel	4.0	--	--	7.9	11	2.1J	3.6
Potassium	4,600	190,000	12,000J	34,000	63,000	7,500J	73,000
Sodium	66,000	4,100,000	290,000J	220,000	1,000,000	16,000J	1,230,000
Vanadium	2.9	8.5	3.2J	27	16	8.3J	15
Zinc	17	24	7.9J	85	300	14J	97
Cyanide	20	20	--	--	--	36	10

Notes:      µg/L      Micrograms per liter  
               LC      Latex Construction Company  
               GW      Groundwater sample  
               U      Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit  
               J      Estimated value  
               --      Constituent analyzed for but not detected

Shaded areas indicate elevated concentrations of constituents

**TABLE 11**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**ON-SITE GROUNDWATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER						
	Background	On Site					
	LC-01-GW	LC-02-GW	LC-03-GW	LC-04-GW	LC-06-GW	LC-07-GW	LC-09-GW
<b>Volatiles</b>							
Methyl t-butyl ether (MTBE)	1.0U	--	0.55J	--	4.4	--	2.2
Cyclohexane	1.0U	--	2.0	--	--	--	--
Methylcyclohexane	1.0U	--	3.0	--	--	--	--
O-xylene	1.0U	--	0.50J	--	--	--	--
Isopropylbenzene	1.0U	--	7.6	--	--	--	--
N-propylbenzene	1.0U	--	13	--	--	--	0.87J
Tert-butylbenzene	1.0U	--	0.89J	--	--	--	--
Sec-butylbenzene	1.0U	--	3.9	--	--	--	--
P-isopropyltoluene	1.0U	--	--	--	0.98J	--	--
N-butylbenzene	1.0U	--	3.8	--	--	--	--
<b>Miscellaneous Volatile Compounds*</b>							
Petroleum product			N				

**TABLE 11 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**ON-SITE GROUNDWATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER						
	Background	On Site					
	LC-01-GW	LC-02-GW	LC-03-GW	LC-04-GW	LC-06-GW	LC-07-GW	LC-09-GW
<b>Extractables</b>							
Naphthalene	10U	--	50J	1J	--	--	--
Caprolactam	10U	110	--	--	--	49	--
2-Methylnaphthalene	10U	--	51J	2J	--	--	--
Acenaphthene	10U	--	--	5J	2J	--	--
Dibenzofuran	10U	--	--	2J	--	--	--
Fluorene	10U	--	--	4J	--	--	--
Phenanthrene	10U	--	130J	6J	--	--	--
Anthracene	10U	--	20J	1J	--	--	--
Fluoranthene	10U	--	20J	1J	--	--	--
<b>Miscellaneous Extractable Compounds<sup>a</sup></b>							
Unknown/No.	13J	4J	580J/4	69J/7	11J/4	3J	3J
Diethyltoluamide		21NJ			6NJ	2NJ	
Naphthalene, Decahydro-			120NJ				
2 Unknown aromatic compounds			860JN				
Benzene, 1,2,3,4-tetramethyl			140NJ				
Naphthalene, 1-methyl-			130NJ				
Naphthalene, 1,5-dimethyl-			240NJ	10NJ			

**TABLE 11 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**ON-SITE GROUNDWATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER						
	Background	On Site					
	LC-01-GW	LC-02-GW	LC-03-GW	LC-04-GW	LC-06-GW	LC-07-GW	LC-09-GW
Naphthalene, 2- (1-methylethy			100NJ	5NJ			
Naphthalene, 1,4,6-trimethyl			750NJ				
Naphthalene, 2,3,6-trimethyl			210NJ				
Naphthalene, 1,4,5-trimethyl			180NJ				
9H-fluorene, 1-methyl-			370NJ				
Benzene, 2-ethyl-1,4-dimethy				3NJ			3NJ
Naphthalene, 2-methyl-				5NJ			
Naphthalene, 2,3-dimethyl-				9NJ			
Naphthalene, 1,6,7-trimethyl				10NJ			
Naphthalene, 1,6,7-trimethyl				18NJ			
Phenol, 4-4'-butylidenebis [2				6NJ			
Unknown amide				6JN			
Naphthalene, 2,6-dimethyl-					2NJ		
Dodecanoic acid					3NJ		
Octanoic acid							3NJ
Nonanoic acid							3NJ

**TABLE 11 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**ON-SITE GROUNDWATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER						
	Background	On Site					
	LC-01-GW	LC-02-GW	LC-03-GW	LC-04-GW	LC-06-GW	LC-07-GW	LC-09-GW
Unknown fatty acid							3JN
Dodecanamide, n,-bis (2-hydr							5NJ
Tetradecanoic acid							2NJ
Phenol, 4-4'- (1-methylethyl)							6NJ
<b>Pesticides/PCBs</b>							
Dieldrin	0.10U	--	0.23N	--	--	--	--

Notes:

- µg/L Micrograms per liter
- LC Latex Construction Company
- GW Groundwater sample (collected from temporary monitoring wells)
- U Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit (SQL)
- J Estimated value
- Constituent analyzed for but not detected.
- N Presumptive evidence of presence of material
- PCB Polychlorinated biphenyls
- \* Miscellaneous compounds are not on the target compound list and are reported only as detected in individual samples; SQL not provided

Shaded areas indicate elevated concentrations of constituents

**TABLE 12**  
**SUMMARY OF INORGANIC ANALYTICAL RESULTS**  
**OFF-SITE MUNICIPAL WELL GROUNDWATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER		
	Background	Thunderbolt Municipal Wells	
	JS-08-DW	LC-01-MW	LC-02-MW
<b>Metals</b>			
Barium	14A	12	13A
Copper	10U	9.9	--
Lead	1.0U	0.60	--
Strontium	340A	370	340A
Zinc	7.4A	31	7.5A
Calcium	29A	28	25A
Magnesium	8.7A	9.8	8.9A
Iron	0.050U	0.059	--
Sodium	12A	20	16A
Potassium	2.1A	2.6	2.2A

Notes:

µg/L	Micrograms per liter
JS	Jordan Sign Company
LC	Latex Construction Company
DW	Drinking water well sample
MW	Municipal well sample
A	Average value
U	Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit
J	Estimated value
--	Constituent analyzed for but not detected

Shaded areas indicate elevated concentrations of constituents

**TABLE 13**  
**DISTRIBUTION OF MUNICIPAL DRINKING WATER WELLS**  
**AND POPULATION SERVED**

Radial Distance	Municipal Well System	Number of Wells Located Within Radial Distance	Total People Served per Well	People Served within Radial Distance
0 - 0.25 Mile	--	--	--	--
0.25 - 0.50 Mile	Savannah Main <sup>a</sup> Thunderbolt <sup>b</sup>	1 1	7,094 1,393	8,487
0.50 - 1 Mile	Dutch Island <sup>c</sup> Thunderbolt <sup>b</sup>	1 1	275 1,393	1,668
1 - 2 Miles	Savannah Main <sup>a</sup> Dutch Island <sup>c</sup> Whitemarsh Island <sup>d</sup>	1 2 1	7,094 275 1,163	8,807
2 - 3 Miles	Savannah Main <sup>a</sup>	4	7,094	28,376
3 - 4 Miles	Savannah Main <sup>a</sup> Whitemarsh Island <sup>d</sup> Wilmington Island <sup>e</sup>	3 2 2	7,094 1,163 2,585	28,778
<b>Total</b>				76,116

Notes: <sup>a</sup>Savannah Main serves 156,072 persons with 22 wells ( $156,072/22 = 7,094$  persons per well)

<sup>b</sup>Thunderbolt serves 2,786 persons with 2 wells ( $2,786/2 = 1,393$  person per well)

<sup>c</sup>Dutch Island serves 824 persons with 3 wells ( $824/3 = 275$  persons per well)

<sup>d</sup>Whitemarsh Island serves 3,489 persons with 3 wells ( $3,489/3 = 1,163$  persons per well)

<sup>e</sup>Wilmington Island serves 10,338 persons with 4 wells ( $10,338/4 = 2,585$  persons per well) (Refs. 41; 42).

## **5.2 SURFACE WATER MIGRATION PATHWAY**

Seven surface water and 12 sediment samples were collected during the ESI. Surface water and sediment sampling locations are depicted on Figure 3 and described in Tables 4 and 5. Inorganic and organic analytical sampling results for surface water samples are summarized in Tables 14 and 15, and inorganic and organic analytical results for sediment samples are summarized in Tables 16 and 17, following Section 5.2.4.

### **5.2.1 Hydrologic Setting**

Surface water runoff from the facility flows directly into the on-site basin, Williamson Creek, or the Wilmington River (Ref. 1). The on-site basin is adjacent and connected to the Wilmington River. Numerous surface water runoff drainage outfalls are located in the south yard and drain into Williamson Creek (Refs. 12, pp. 28 - 31; 36, pp. 7, 20; also see Appendix B, pp. B-15, B-17, B-18, B-32, B-33, B-35, B-37). Williamson Creek flows southeast, east, and then northeast for approximately 1,000 feet and converges with the Wilmington River, which continues south for approximately 2 miles before entering the Atlantic Ocean (Ref. 1). Williamson Creek is a small stream with a reported flow of less than 10 cubic feet per second (cfs). The flow rate of the Wilmington River was reported as approximately 10,000 cfs during peak hours of high tide, with a net flow out to sea of approximately 1,000 cfs. However, Williamson Creek and the Wilmington River are both tidally influenced (Refs. 1; 4; 5, p. 5).

### **5.2.2 Surface Water and Sediment Sample Locations and Analytical Results**

A total of 7 surface water samples and 12 sediment samples were collected during the ESI. Five surface water and 6 sediment samples were collected from Williamson Creek. Background samples LC-01-SW and LC-01-SD were collected upstream of the facility and the Sylvan Island Road bridge (Ref. 12, p. 30). Samples LC-02-SW and LC-02-SD were collected adjacent to the facility from beneath a surface water runoff drainage outfall located in the northwest corner of the south yard, west of the transfer pit, in an area minimal of stressed vegetation. An oily sheen was noted on the surface of the water at this location (Ref. 12, pp. 19, 29). Samples LC-03-SW and LC-03-SD were collected from an area of stressed vegetation in the marsh along Williamson Creek, adjacent to the facility and west of Building 201 and the hazardous waste storage area. Personnel observed an oily sheen on the surface of the water at this

location (Ref. 12, pp. 20, 29). Samples LC-04-SW and LC-04-SD were collected from an area of stressed vegetation in the marsh along Williamson Creek, adjacent to the southern end of the south yard, south of the sandblast area (Ref. 12, pp. 20, 21, 27, 28). Samples LC-05-SW and LC-05-SD were collected from Williamson Creek at its confluence with the Wilmington River. Surface water sample LC-05-SW was collected on the south bank of Williamson Creek, and sediment sample LC-05-SD was collected in the salt marsh on the north bank of Williamson Creek (Ref. 12, pp. 22, 27). Sediment sample LC-12-SD was collected from Williamson Creek, adjacent to the facility area below a surface water runoff outfall drain at the northwest corner of the south yard (Ref. 12, p. 30). Two surface water and two sediment samples were collected from the basin. Samples LC-08-SW and LC-08-SD were collected from the west-central portion of the basin. Samples LC-09-SW and LC-09-SD were collected from the east-central portion of the basin (Ref. 12, pp. 16, 18). Personnel observed miscellaneous trash and debris along the outside of the southern fenceline and along the banks of Williamson Creek (Refs. 12, p. 28; 36, pp. 20, 21; also see Appendix B, p. B-9, B-18, B-43).

No surface water samples were collected from the Wilmington River. The flow of the Wilmington River is so high that no organic constituents would likely be present and any inorganic constituents would be expected to adhere to the sediments. Four sediment samples were collected from the Wilmington River. Background sediment sample LC-07-SD was collected upstream of the facility and the Highway 80 bridge for comparison to downstream sediment samples (Ref. 12, pp. 25, 26). A control sample, LC-06-SD, was collected from the confluence of Grays Creek and the Wilmington River, upstream of the facility. Grays Creek is located adjacent to an island owned by TMI; USACE and the Palmer Johnson facility use the island for disposal of dredge materials from the basin, Williamson Creek, and the Wilmington River. USACE maintains all river channels and regularly dredges the Wilmington River channel. Since approximately 1999, USACE has dredged approximately 150,000 cubic yards of sediment from the on-site basin (Ref. 12, pp. 24, 25, 42, 43). Personnel noted a black odorous material in sediment sample LC-06-SD (Ref. 12, p. 25; also see Appendix B, p. B-11). Sediment sample LC-10-SD was collected from the Wilmington River adjacent to the basin, and sediment sample LC-11-SD was collected from the Wilmington River downstream of the confluence of Williamson Creek and the river (Ref. 12, pp. 19, 23).

Vanadium was the only inorganic constituent of concern detected at elevated levels in surface water samples. Vanadium was detected in all four samples collected from Williamson Creek at concentrations ranging from 1.7 µg/L to 1.8 µg/L. Vanadium was also detected at 1.8 µg/L in both surface water samples collected from the basin (See Table 15). No elevated levels of organic constituents were detected in surface water samples collected from Williamson Creek or the on-site basin (See Table 16).

Several inorganic constituents were detected at elevated levels in sediment samples collected from Williamson Creek, including antimony, barium, beryllium, chromium, cobalt, copper, lead, manganese, mercury, nickel, silver, vanadium, and zinc. Antimony was detected at 1.5 mg/kg, and beryllium was detected at 0.60J mg/kg in sediment sample LC-04-SD. Barium was detected in four sediment samples at concentrations ranging from 36 mg/kg to 280J mg/kg. Chromium was detected in three sediment samples at 34J mg/kg, 40 mg/kg, and 48 mg/kg. Cobalt was detected in four sediment samples at concentrations ranging from 6.6J mg/kg to 11J mg/kg. Copper was detected in four sediment samples at concentrations ranging from 44 mg/kg to 510J mg/kg. Lead was detected in three sediment samples at 30J mg/kg, 88J mg/kg, and 320J mg/kg. Manganese was detected in two sediment samples at 270J mg/kg and in one sediment sample at 330J mg/kg. Mercury was detected at 1.5 mg/kg in sediment sample LC-03-SD. Nickel was detected in two sediment samples at 9.5J mg/kg and 59J mg/kg. Silver was detected in two sediment samples at 0.79 mg/kg and 0.80 mg/kg. Vanadium was detected in two sediment samples at 56J mg/kg and 65 mg/kg. Zinc was detected in all five sediment samples collected from Williamson Creek at concentrations ranging from 47 mg/kg to 740J mg/kg.

PCB was the only organic constituent detected at an elevated level in sediment samples collected from Williamson Creek. PCB-1254 was detected at 230 µg/kg in sediment sample LC-03-SD collected west of Building 201 and the hazardous waste storage area. No inorganic constituents of concern or organic constituents were detected at elevated levels in sediment samples collected from the on-site basin or the Wilmington River.

### 5.2.3 Surface Water Targets

No known surface water intakes are located along the Wilmington River due to its salinity (Refs. 41; 42). Both the Wilmington River and Williamson Creek are subject to tidal flushing and are bordered by extensive salt marshes, with more than 20 miles of marsh frontage occurring along the Wilmington River (Refs. 1; 4). These salt marshes provide a breeding ground for shrimp, which are commercially harvested. The Wilmington River and Williamson Creek are used for both commercial and recreational fishing. Fish harvested from these and other rivers in the area include crabs, clams, conch, carp, shad, and sturgeon (Refs. 4; 12, p. 24; 44). In addition, the Wilmington River and the on-site basin are habitat for the federally-endangered West Indian Manatee (*Trichechus manatus*) (Refs. 12, p. 24; 45, pp. 29, 30).

### 5.2.4 Surface Water Conclusions

The surface water migration pathway is the primary pathway of concern at the Latex Construction Company facility. Vanadium was detected in all four surface water samples collected from Williamson Creek, and in both surface water samples collected from the basin. Several inorganic constituents were detected at elevated levels in sediment samples collected from Williamson Creek, including antimony, barium, beryllium, chromium, cobalt, copper, lead, manganese, mercury, nickel, silver, vanadium, and zinc. PCB-1254 was detected at 230 µg/kg in sediment sample LC-03-SD collected west of Building 201 and the hazardous waste storage area. However, no inorganic constituents of concern or organic constituents were detected at elevated levels in sediment samples collected from the on-site basin or the Wilmington River. Williamson Creek is a fishery. In addition, the Wilmington River and the on-site basin are habitat for the federally-endangered West Indian Manatee (*Trichechus manatus*).

**TABLE 14**  
**SUMMARY OF INORGANIC ANALYTICAL RESULTS**  
**SURFACE WATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER							
	Background Williamson Creek		Williamson Creek				On-site Basin	
	LC-01-SW	LC-01A-SW	LC-02-SW	LC-03-SW	LC-04-SW	LC-05-SW	LC-08-SW	LC-09-SW
<b>Metals</b>								
Aluminum	220U	220U	330	--	--	308	203	--
Barium	14	15	16	15	16	17	17	17
Beryllium	0.40U	0.49	--	--	--	--	0.56	0.48
Calcium	190,000J	200,000J	200,000J	200,000J	200,000J	190,000J	170,000J	170,000J
Copper	2.5	2.6U	6.7	3.9	4.4	3.0	3.4	3.1
Magnesium	650,000	650,000	660,000	670,000	680,000	640,000	580,000	56,000
Manganese	17J	18J	20J	20J	18J	35J	27J	28J
Potassium	240,000	240,000	240,000	240,000	250,000	240,000	220,000	210,000
Sodium	5,500,000	5,500,000	5,400,000	5,700,000	5,800,000	5,420,000	4,600,000	4,500,000
Vanadium	1.7U	1.7U	1.7	1.8	1.8	1.7	1.8	1.8
Zinc	6.3	7.9	9.6	6.7	8.0	15	10	14
Cyanide	18	21	27	21	12	21	32	38

Notes:      µg/L      Micrograms per liter  
               LC      Latex Construction Company  
               SW      Surface water sample  
               U      Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit  
               J      Estimated value  
               --      Constituent analyzed for but not detected

Shaded areas indicate elevated concentrations of constituents

**TABLE 15**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SURFACE WATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER							
	Background Williamson Creek		Williamson Creek				On-site Basin	
	LC-01-SW	LC-01A-SW	LC-02-SW	LC-03-SW	LC-04-SW	LC-05-SW	LC-08-SW	LC-09-SW
<b>Volatiles</b>								
<i>None</i>								
<b>Miscellaneous Volatile Compounds*</b>								
<i>None</i>								
<b>Extractables</b>								
Acenaphthene	NA	10U	1J	NA	NA	--	--	--
Fluorene	NA	10U	1J	NA	NA	--	--	--
Phenanthrene	NA	10U	2J	NA	NA	--	--	--
<b>Miscellaneous Extractable Compounds<sup>†</sup></b>								
Unknowns/No.	NA		64J/8	NA	NA	7J/3		8J/2
Naphthalene, 1-methyl-	NA		4NJ	NA	NA			
Naphthalene, 1,5-dimethyl-	NA		8NJ	NA	NA			
Naphthalene, 2,3-dimethyl-	NA		8NJ	NA	NA			
Naphthalene, 2- (1-methylethy	NA		4NJ	NA	NA			
Naphthalene, 2,3,6-trimethyl	NA		29NJ	NA	NA			
Naphthalene, 2,3,6-trimethyl	NA		9NJ	NA	NA			

**TABLE 15 (CONTINUED)**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SURFACE WATER SAMPLES**

ANALYTE (µg/L)	SAMPLE NUMBER							
	Background Williamson Creek		Williamson Creek				On-site Basin	
	LC-01-SW	LC-01A-SW	LC-02-SW	LC-03-SW	LC-04-SW	LC-05-SW	LC-08-SW	LC-09-SW
Naphthalene, 1,6,7,-trimethyl	NA		18NJ	NA	NA			
Phenanthrene, 2,5-dimethyl-	NA		3NJ	NA	NA			
(Carbethoxyethylidine) triphe	NA		4NJ	NA	NA			
2-Propanol, 1- (2-methoxprop	NA			NA	NA	5J		
3-Penten-2-ol	NA			NA	NA		3NJ	
3-Butyl-2-ol, 2-methyl-	NA			NA	NA		19NJ	
2-Butenoic acid, 4-nitrophen	NA			NA	NA		18NJ	
<b>Pesticides/PCBs</b>								
<i>None</i>								

Notes:

- µg/kg Micrograms per kilogram
- LC Latex Construction Company
- SW Surface water sample
- NA Not analyzed; sample bottle was broken during shipment
- U Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit (SQL)
- J Estimated value
- Constituent analyzed for but not detected
- PCB Polychlorinated biphenyls
- A Miscellaneous compounds are not on the target compound list and are reported only as detected in individual samples; SQL not provided

**TABLE 16  
SUMMARY OF INORGANIC ANALYTICAL RESULTS  
SEDIMENT SAMPLES**

ANALYTE (mg/kg)	SAMPLE NUMBER											
	Background Williamson Creek	Williamson Creek adjacent to Latex Construction Site	Confluence of Williamson Creek with the Wilmington River	Williamson Creek in Salt Marsh	Background Wilmington River	Control Confluence of Grays Creek with the Wilmington River	On-site Basin	Wilmington River Adjacent to the On-site Basin	Wilmington River Downstream of the Confluence With Williamson Creek			
	LC-01:SD	LC-02:SD	LC-03:SD	LC-04:SD	LC-05:SD	LC-12:SD	LC-07:SD	LC-06:SD	LC-08:SD	LC-09:SD	LC-10:SD	LC-11:SD
<b>Metals</b>												
Aluminum	5,400	6,200J	21,000J	14,000J	22,000	14,000	5,200	20,000	30,000J	24,000J	5,200J	4,400
Antimony	1.0UJ	--	--	1.5J	--	--	1.0UJ	2.9J	--	--	--	--
Barium	9.6	120J	44J	280J	27	36J	8.7	28	42J	36J	8.7J	7.7
Beryllium	0.12UR	--	--	0.60J	--	--	--	--	--	--	--	--
Calcium	570J	2,500J	1,800J	5,300J	4,500J	1,500J	1,100J	2,100J	4,700J	5,200J	7,500J	1,500J
Chromium	10J	17	40J	48J	34J	28J	12J	43J	51	45	10	11J
Cobalt	1.4J	2.6J	6.6J	19J	6.6J	4.9J	2.0J	7.2J	8.9J	7.5J	1.8J	2.0J
Copper	6.2U	190J	130J	510J	16J	44J	5.5U	20	23J	20J	5.5J	5.7J
Iron	6,000	8,200J	24,000J	22,000J	26,000	18,000	8,900	28,000	31,000J	29,000J	7,200J	8,400
Lead	12J	20	88J	320J	22J	30J	6.7J	24J	23J	21J	5.2J	6.2J
Magnesium	1,400J	1,800J	4,900J	2,900J	4,300J	3,700J	1,600J	5,800J	7,900J	7,200J	1,600J	1,600J
Manganese	89J	91J	270J	200J	270J	330J	72J	260J	470J	470J	86J	84J
Mercury (Total)	0.08U	--	0.15	--	--	--	--	--	--	--	--	--
Nickel	2.5J	--	--	59J	9.5J	7.1J	2.6J	11J	--	--	--	2.6J
Potassium	890J	1,100J	3,200J	2,100J	3,200J	2,300J	1,000J	3,900J	5,100J	4,400J	940J	950J
Silver	0.40U	--	--	0.79	--	0.80	0.40U	1.0	--	1.5	--	--
Sodium	3,400	3,000	12,000	5,200	9,800	7,000	3,700	13,000	26,000	24,000J	4,200	3,500
Vanadium	17	18J	56J	38J	65	42	17	67	73J	68J	15J	18
Zinc	15	86J	150J	740J	47J	65J	20	64	76J	72J	21J	23

Notes: mg/kg Milligrams per kilogram  
 LC Latex Construction Company  
 SD Sediment sample  
 U Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit  
 J Estimated value  
 -- Constituent analyzed for but not detected  
 N Presumptive evidence of presence of material  
 N/A Not analyzed

Shaded areas indicate elevated concentrations of constituents

**TABLE 17**  
**SUMMARY OF ORGANIC ANALYTICAL RESULTS**  
**SEDIMENT SAMPLES**

ANALYTE (ug/kg)	SAMPLE NUMBER											
	Background Williamson Creek	Williamson Creek adjacent to Later Construction Site			Confluence of Williamson Creek with the Wilmington River	Williamson Creek in Salt Marsh	Background Wilmington River	Control Confluence of Grays Creek with the Wilmington River	On-site Basin		Wilmington River Adjacent to the On-site Basin	Wilmington River Downstream of the Confluence With Williamson Creek
	LC-01-SD	LC-02-SD	LC-03-SD	LC-04-SD	LC-05-SD	LC-12-SD	LC-07-SD	LC-06-SD	LC-08-SD	LC-09-SD	LC-10-SD	LC-11-SD
Volatiles												
Acetone	18UJ	17J	--	--	71J	--	23J	62J	--	--	130J	31J
Carbon Disulfide	18U	--	--	--	18J	--	--	--	--	--	--	--
Miscellaneous Volatile Compounds*												
1,4-Methanoazulene, decahydr						130NJ						160NJ
Cyclic alkene												35JN
Extractables												
Benzaldehyde	590UJ	--	--	--	--	530J	--	--	--	--	--	--
Phenanthrene	590U	--	--	600J	--	--	570U	170J	--	--	--	110J
Fluoranthene	590U	500J	--	850J	--	89J	570U	280J	--	--	49J	140J
Pyrene	590U	490J	--	750J	--	93J	570U	230J	--	--	50J	130J
Benzo(a)anthracene	590U	320J	--	380J	--	--	570U	1,000U	--	--	--	56J
Chrysene	590U	400J	--	480J	--	82J	570U	140J	--	--	--	75J
Benzo(b)fluoranthene	590U	340J	--	420J	--	--	570U	110J	--	--	--	42J
Benzo(k)fluoranthene	590U	350J	--	300J	--	--	570U	100J	--	--	--	49J
Miscellaneous Extractable Compounds*												
Unknowns/No.	4,200J/7	13,000J/10	24,000J/8	16,000J/10	15,000J/12	19,000J/21	4,500J/12	17,000J/18	28,000J/13	25,000J/10	3,300J/10	5,700J/10
Tetradecanoic acid	150NJ		980NJ		240NJ	480NJ		850NJ	1,800NJ			110NJ
Unknown organic acid	180JN											
Oxacycloheptadecan-2-one	360NJ		1,400NJ									
Hexadecanoic acid	640NJ	1,000NJ	8,900NJ	4,600NJ		3,400NJ	210NJ	1,800NJ		1,300NJ	850NJ	460NJ
5,8,11-Heptadecatrien-1-ol	160NJ											
Oleic acid	290NJ							930NJ				
Cetylpyridinium chloride	150NJ											
Unknown amide	240JN								1,100JN			210J
Stannane, bromotributyl-		550NJ										
Hexadecanoic acid, methyl es			1,500NJ	990NJ		810NJ		370NJ				
Cholesterol			3,300NJ					1,100NJ		2,000NJ		
D-friedoolean-14-en-3-one			2,500NJ					2,200NJ				
Phenol, p-tert-butyl				800NJ								

**TABLE 17 (CONTINUED)  
SUMMARY OF ORGANIC ANALYTICAL RESULTS  
SEDIMENT SAMPLES**

ANALYTE (µg/kg)	SAMPLE NUMBER												
	Background Williamson Creek	Williamson Creek adjacent to Latex Construction Site				Confluence of Williamson Creek with the Wilmington River	Williamson Creek in Salt Marsh	Background Wilmington River	Control/Confluence of Grays Creek with the Wilmington River	On-site Basin		Wilmington River Adjacent to the On-site Basin	Wilmington River Downstream of the Confluence With Williamson Creek
	LC-01-SD	LC-02-SD	LC-03-SD	LC-04-SD	LC-05-SD	LC-12-SD	LC-07-SD	LC-06-SD	LC-08-SD	LC-09-SD	LC-10-SD	LC-11-SD	
Pentadecanoic acid					730NJ	130NJ							
Unknown fatty acid								1,500NJ					
11-Hexadecenoic acid, methyl								250NJ					
Oxacycloheptadecan-2-one, 16								1,500NJ					
Phytol								360NJ	770NJ				
9-Octadecenamide, (z)-							260NJ	340NJ					
Lup-20 (29) -en-3-one								2,700NJ					
Unknown steroid/No.						1,700NJ/2			2,000NJ				
Dodecanoic acid, 10-methyl-											110NJ		
Cholest-5-en-e-ol (3. beta)-											240NJ		
4,7-Methanoazulene, decahydr											300NJ		
9-Hexadecenoic acid					710NJ				2,400NJ			230NJ	
Unknown PAH												83NJ	
Dibenzo [def,mno] chrysene												720NJ	
Phenol, 2- (1,1-dimethylthyl						170NJ							
Tridecanoic acid, 12-methyl-						200NJ							
D-homoandrostane, (5.Alpha.,						1,200NJ							
Pesticides/PCBs													
Alpha-BHC	2.9U	—	4.4N	—	—	—	—	—	—	—	—	—	
Dieldrin	5.5U	—	19N	—	—	—	—	—	—	—	—	—	
PCB-1254 (Aroclor 1254)	55U	—	230	—	—	—	—	—	—	—	—	—	

µg/kg Micrograms per kilogram  
 LC Latex Construction Company  
 SD Sediment sample  
 U Constituent analyzed for but not detected; value reported is the sample minimum quantitation limit (SQL)  
 J Estimated value  
 — Constituent analyzed for but not detected.  
 N Presumptive evidence of presence of material  
 N/A Not analyzed  
 \* Miscellaneous compounds are not on the target compound list and are reported only as detected in individual samples; SQL not provided

Shaded areas indicate elevated concentrations of constituents

### **5.3 SOIL EXPOSURE PATHWAY AND AIR MIGRATION PATHWAY**

START personnel collected eight on-site surface soil and eight on-site subsurface samples. Surface soil sample results are discussed in Section 4.0 and are summarized in Tables 6 through 9. No air samples were collected during the ESI.

#### **5.3.1 Physical Conditions**

Land use within a 4-mile radius of the landfill is a mixture of urban, commercial, light industrial, and estuarine (Ref. 1). The facility is located in a small industrial area surrounded by residential neighborhoods and is fenced on the north, west, and south sides. However, access by boat is unrestricted. Most of the area has sandy surface layer over a loamy or sandy subsoil or underlying layers. A band of marshland parallels the coastline and extends inland along the major streams (Ref. 6, p. 1).

#### **5.3.2 Soil and Air Sample Locations and Analytical Results**

Source area and off-site surface and subsurface soil sampling locations and analytical results were previously discussed under Source Sampling in Section 4.1. No air samples were collected during the ESI.

#### **5.3.3 Soil and Air Targets**

The facility is now operating as the Palmer Johnson Company and employs approximately 200 people (Ref. 36, p.7). The nearest residence is located approximately 100 feet to the north, while the nearest school, Thunderbolt Elementary, is located approximately 2,800 feet to the northwest (Ref. 1). Approximately 82,795 people reside within a 4-mile radius of the facility and are distributed as follows: 0 to 0.25 mile, 64 persons; 0.25 to 0.50 mile, 1,251 persons; 0.50 to 1 mile, 1,461 persons; 1 to 2 miles, 15,947 persons; 2 to 3 miles, 29,713 persons; and 3 to 4 miles, 34,359 persons (Ref. 46).

The Wilmington River and the on-site basin are habitat for the federally-endangered West Indian Manatee (*Trichechus manatus*) (Ref. 45, pp. 29, 30). Although several other endangered and threatened species are known to be located in Chatham County, Georgia, their exact habitat locations are not known (Ref. 45). Over 4,000 acres of wetlands are located within 4 miles of the facility (Ref. 1).

#### **5.3.4 Soil and Air Conclusions**

The soil exposure and air migration pathways are of minimal concern at the facility. Although, Palmer Johnson is an active facility that employs approximately 200 people, a minimal amount of contaminated soil is the only source area on site. No residents, schools, or day care centers are located within 200 feet of on-site contaminated soil. The entire facility is fenced, and access is restricted. Approximately 2,776 people reside within 1 mile of the facility, and approximately 82,795 persons are located within a 4-mile radius of the facility. Over 4,000 acres of wetlands are located within 4 miles of on-site sources, and the federally-endangered West Indian Manatee inhabits the Wilmington River and the on-site basin.

### **6.0 SUMMARY AND CONCLUSIONS**

The Latex Construction Company facility, is a 27-acre former ship building and repair facility located adjacent to the Wilmington River at 3126 River Road in Thunderbolt, Chatham County, Georgia.

The facility is owned by Thunderbolt Marine, Inc. (TMI), which presently leases the property to Palmer Johnson Company for refurbishing luxury yachts. Most of the facility surface is covered by asphalt; therefore, this ESI evaluation as the source area a minimal quantity of contaminated soil in several locations throughout the facility. No other source areas were identified.

Although several inorganic and organic constituents were detected in on-site groundwater samples collected from permanent and temporary monitor wells installed in the surficial aquifer, no known targets located within a 4-mile radius of the facility obtain potable drinking water from the surficial aquifer. Because of saltwater intrusion, the surficial aquifer is not a good source for potable water. Furthermore, the surficial aquifer is separated from the Floridan Aquifer system by the confining beds of the Hawthorn Group. Numerous municipal wells completed in the Floridan Aquifer are located within 4 miles of the facility. No inorganic constituents of concern or organic constituents were detected at elevated levels in the groundwater samples collected from the two Thunderbolt municipal wells. A total of 76,116 people obtain potable water from municipal wells installed in the Floridan Aquifer within 4 miles of the facility.

The surface water migration pathway is the primary pathway of concern at the Latex facility. Several inorganic constituents were detected at elevated levels in sediment samples collected from Williamson Creek, including antimony, barium, beryllium, chromium, cobalt, copper, lead, manganese, mercury, nickel, silver, vanadium, and zinc. PCB-1254 was detected at 230 µg/kg in sediment sample LC-03-SD collected west of Building 201 and the hazardous waste storage area. No inorganic constituents of concern or organic constituents were detected at elevated levels in sediment samples collected from the on-site basin or the Wilmington River. Williamson Creek and the Wilmington River are fisheries. In addition, the Wilmington River and the on-site basin are habitat for the federally-endangered West Indian Manatee (*Trichechus manatus*).

The soil exposure and air migration pathways are of minimal concern at the facility. Although, Palmer Johnson is an active facility that employs approximately 200 people, a minimal amount of contaminated soil is the only source area on site. No residents, schools, or day care centers are located within 200 feet of on-site contaminated soil. Approximately 2,776 people reside within 1 mile of the facility, and approximately 82,795 people are located within a 4-mile radius of the facility. Over 4,000 acres of wetlands are located within 4 miles of on-site sources, and the federally-endangered West Indian Manatee inhabits the Wilmington River and the on-site basin.

Based on the analytical results for samples collected during the ESI, the Latex Construction Company facility is a potential candidate for future NPL listing. The primary criteria of the Hazard Ranking System have been met, and the site warrants further evaluation under CERCLA.

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**APPENDIX B**  
**PHOTOGRAPH LOG**  
**(45 pages)**

U.S. EPA REGION IV

# SDMS

## Unscannable Material Target Sheet

DocID: 10724710 Site ID: GAD980803696

Site Name: Antey Construction Co.

### Nature of Material:

Map: ☐

Computer Disks: ☐

Photos: ☒

CD-ROM: ☐

Blueprints: ☐

Oversized Report: ☐

Slides: ☐

Log Book: ☐

Other (describe): Site Photos

Amount of material: \_\_\_\_\_

\* Please contact the appropriate Records Center to view the material \*

**APPENDIX A**  
**ANALYTICAL DATA SHEETS**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**


**Region 4**

**Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720**

**MEMORANDUM**

Date: 05/10/2001

Subject: Results of METALS Sample Analysis  
01-0528 Latex Construction Co  
Thunderbolt, GA

From: Goddard, Denise 

To: King, CharlesL

CC: Heather Kennedy  
START/TT

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

**ATTACHMENT**

May 3, 2001

## INORGANIC DATA QUALIFIERS REPORT

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4775	Ca	UJ	Serial dilution percent difference = 13.8% Positives in cal blanks
	Pb	J	Matrix spike recovery = 68.5%
	Mg	U	Positives in cal and blind blanks
	Mn	J	Serial dilution percent difference = 10.4%
	K	U	Positives in cal and blind blanks
4776	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%

May 3, 2001

## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4777	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Tl	U	Baseline instability in cal and prep blanks
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%
4778	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	J	Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	Detection limit raised due to lack of sensitivity of instrumentation
	Tl	U	Baseline instability in cal and prep blanks
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%

May 3, 2001

## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4779	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%
4780	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	UJ	Matrix spike recovery = 55%
			Positive reported < lowest std on cal curve

May 3, 2001

## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4781	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%
4782	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Cd	U	Baseline instability in cal blanks
	Ca	J	Serial dilution percent difference = 13.8%
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%
	Ni	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL

May 3, 2001

## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4783	Al	J	Sample pH 7 when received by lab for analysis
	Sb	J	Sample pH 7 when received by lab for analysis
	As	UJ	Sample pH 7 when received by lab for analysis Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Sample pH 7 when received by lab for analysis
	Be	J	Sample pH 7 when received by lab for analysis
	Cd	J	Sample pH 7 when received by lab for analysis
	Ca	J	Sample pH 7 when received by lab for analysis Serial dilution percent difference = 13.8%
	Cr	J	Sample pH 7 when received by lab for analysis
	Co	J	Sample pH 7 when received by lab for analysis
	Cu	J	Sample pH 7 when received by lab for analysis
	Fe	J	Sample pH 7 when received by lab for analysis
	Pb	J	Sample pH 7 when received by lab for analysis Matrix spike recovery = 68.5%
	Mg	J	Sample pH 7 when received by lab for analysis
	Mn	J	Sample pH 7 when received by lab for analysis Serial dilution percent difference = 10.4%
	Hg	J	Sample pH 7 when received by lab for analysis
	Ni	J	Sample pH 7 when received by lab for analysis
	K	J	Sample pH 7 when received by lab for analysis
	Se	UJ	Sample pH 7 when received by lab for analysis Detection limit raised due to lack of sensitivity of instrumentation
	Ag	J	Sample pH 7 when received by lab for analysis
	Na	J	Sample pH 7 when received by lab for analysis
	Tl	J	Sample pH 7 when received by lab for analysis
	V	J	Sample pH 7 when received by lab for analysis
	Zn	J	Sample pH 7 when received by lab for analysis
4784	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Cd	U	Baseline instability in cal blanks
	Ca	J	Serial dilution percent difference = 13.8%
	Cr	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%
	Hg	U	Positive reported < lowest std on cal curve
	CN	U	Positive reported < lowest std on cal curve
4785	Ca	J	Serial dilution percent difference = 13.8%
	Fe	U	Positives in cal blanks
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4786	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Ag	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%
4787	Al	U	Positives in cal and blind blanks
	Ca	UJ	Serial dilution percent difference = 13.8%
			Positives in cal blanks
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%
	K	U	Positives in cal and blind blanks
	Tl	U	Baseline instability in cal blanks

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099Project Number: 01-0528Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4788	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Cd	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	J	Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%
4789	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4790	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Cd	U	% RSD > 20% for ICP multiple exposures and results > IDL, but < CRDL
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	J	Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Tl	U	Baseline instability in cal and prep blanks
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	UJ	Matrix spike recovery = 55%
			Positive reported < lowest std on cal curve
4791	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	J	Blind spike recovery < action limit
	Cd	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	J	Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	Detection limit raised due to lack of sensitivity of instrumentation
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4792	Al	U	Positives in cal and blind blanks
	Ca	J	Serial dilution percent difference = 13.8%
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%
4793	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
	Tl	U	Baseline instability in cal and prep blanks
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%
4794	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	UJ	Matrix spike recovery = 55%
			Positive reported < lowest std on cal curve

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4795	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Cd	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	Detection limit raised due to lack of stability of instrumentation
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	UJ	Matrix spike recovery = 55%
			Positive reported < lowest std on cal curve
4796	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4797	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	J	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Hg	U	Positive reported < lowest std on cal curve
	Ni	J	Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	Detection limit raised due to lack of sensitivity of instrumentation
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	UJ	Matrix spike recovery = 55%
			Positive reported < lowest std on cal curve
4798	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ag	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	UJ	Matrix spike recovery = 55%

Positive reported &lt; lowest std on cal curve

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099Project Number: 01-0528Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4799	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	UJ	Blind spike recovery < warning limit
			Baseline instability in cal blanks
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	J	Matrix spike recovery = 55%
4800	Be	U	% RSD . 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ca	J	Serial dilution percent difference = 13.8%
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4801	Al	J	Serial dilution percent difference = 12.4%
	Sb	J	Matrix spike recovery = 37.6%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ba	J	Serial dilution percent difference = 13.1%
	Be	R	Blind spike recovery < action limit
	Cd	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ca	J	Blind spike recovery < warning limit
	Co	J	Blind spike recovery < warning limit
	Cu	J	Serial dilution percent difference = 18.8%
	Fe	J	Serial dilution percent difference = 13.2%
	Pb	J	Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 18.2%
	Mn	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.1%
	Ni	J	Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 12.4%
	Se	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	V	J	Serial dilution percent difference = 12.6%
	Zn	J	Serial dilution percent difference = 13.2%
	CN	UU	Matrix spike recovery = 55%
			Positive reported < lowest std on cal curve
4802	Sb	J	Matrix spike recovery = 71.7%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Be	J	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Pb	J	Matrix duplicate RPD = 35.7%
			Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4%
			Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8%
			Matrix duplicate RPD = 43.4%
			Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	Se	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	CN	J	Matrix spike recovery = 67.3%

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4803	Sb	J	Matrix spike recovery = 71.7%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Pb	J	Matrix duplicate RPD = 35.7%
			Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4%
			Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8%
			Matrix duplicate RPD = 43.4%
			Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	Se	U	Detection limit raised due to lack of sensitivity of instrumentation
	CN	J	Matrix spike recovery = 67.3%
4804	Sb	J	Matrix spike recovery = 71.7%
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Pb	J	Matrix duplicate RPD = 35.7%
			Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4%
			Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8%
			Matrix duplicate RPD = 43.4%
			Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	CN	UJ	Matrix spike recovery = 67.3%
			Positive reported < lowest std on cal curve

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4805	Sb	UJ	Matrix spike recovery = 71.7% % RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	As	U	Baseline instability in cal blanks
	Be	R	Blind spike recovery < action limit
	Cd	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Pb	J	Matrix duplicate RPD = 35.7% Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4% Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8% Matrix duplicate RPD = 43.4% Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	Se	U	Detection limit raised due to lack of sensitivity of instrumentation
	CN	J	Matrix spike recovery = 67.3%
4806	Sb	J	Matrix spike recovery = 71.7%
	As	U	Baseline instability in cal blanks
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	UJ	Blind spike recovery < warning limit % RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix duplicate RPD = 35.7% Blind spike recovery < warning limit
	Mg	UJ	Blind spike recovery < warning limit Positives in cal blanks Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4% Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8% Matrix duplicate RPD = 43.4% Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	CN	UJ	Matrix spike recovery = 67.3% Positive reported < lowest std on cal curve

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4807	Sb	J	Matrix spike recovery = 71.7%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix duplicate RPD = 35.7%
			Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4%
			Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8%
			Matrix duplicate RPD = 43.4%
			Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
4808	Se	U	Detection limit raised due to lack of sensitivity of instrumentation
	CN	J	Matrix spike recovery = 67.3%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ca	J	Serial dilution percent difference = 13.8%
	Pb	J	Matrix spike recovery = 68.5%
4809	Mn	J	Serial dilution percent difference = 10.4%
	Hg	U	Positive reported < lowest std on cal curve
	Sb	J	Matrix spike recovery = 71.7%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Pb	J	Matrix duplicate RPD = 35.7%
			Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4%
			Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8%
			Matrix duplicate RPD = 43.4%
			Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	Se	U	Detection limit raised due to lack of sensitivity of instrumentation
	CN	J	Matrix spike recovery = 67.3%

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4810	Sb	J	Matrix spike recovery = 71.7%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix duplicate RPD = 35.7%
			Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4%
			Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8%
			Matrix duplicate RPD = 43.4%
			Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	CN	J	Matrix spike recovery = 67.3%
4811	Al	U	Positives in cal and blind blanks
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Ca	J	Serial dilution percent difference = 13.8%
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%
	Se	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
4812	Ca	J	Serial dilution percent difference = 13.8%
	Fe	U	Positives in cal blanks
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%
	Tl	U	Baseline instability in cal blanks
4813	Al	U	Positives in cal and blind blanks
	Ca	J	Serial dilution percent difference = 13.8%
	Fe	U	Positives in cal blanks
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%
	Tl	U	Baseline instability in cal blanks
4814	Al	U	Positives in cal and blind blanks
	Ca	J	Serial dilution percent difference = 13.8%
	Fe	U	Positives in cal blanks
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%

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## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4815	Sb	UJ	Matrix spike recovery = 71.7% % RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Pb	J	Matrix duplicate RPD = 35.7% Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4% Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8% Matrix duplicate RPD = 43.4% Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	Se	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ag	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	CN	J	Matrix spike recovery = 67.3%
4816	Al	U	Positives in cal and blind blanks
	Ca	J	Serial dilution percent difference = 13.8%
	Fe	U	Positives in cal blanks
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%
	Tl	U	Baseline instability in cal blanks
4817	Al	U	Positives in cal and blind blanks
	Ca	J	Serial dilution percent difference = 13.8%
	Cu	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Fe	U	Positives in cal blanks
	Pb	J	Matrix spike recovery = 68.5%
	Mn	J	Serial dilution percent difference = 10.4%

May 3, 2001

## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4818	Sb	J	Matrix spike recovery = 71.7%
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Cu	U	Baseline instability in cal blanks
	Pb	J	Matrix duplicate RPD = 35.7%
			Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4%
			Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8%
			Matrix duplicate RPD = 43.4%
			Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	CN	J	Matrix spike recovery = 67.3%
4819	Sb	UJ	Matrix spike recovery = 71.7%
			% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	As	U	Detection limit raised due to lack of sensitivity of instrumentation
	Be	R	Blind spike recovery < action limit
	Ca	J	Blind spike recovery < warning limit
	Cr	J	Matrix spike recovery = 174%
	Co	J	Blind spike recovery < warning limit
	Pb	J	Matrix duplicate RPD = 35.7%
			Blind spike recovery < warning limit
	Mg	J	Blind spike recovery < warning limit
			Serial dilution percent difference = 16.6%
	Mn	J	Matrix spike recovery = 190.4%
			Blind spike recovery < warning limit
	Ni	J	Matrix spike recovery = 191.8%
			Matrix duplicate RPD = 43.4%
			Blind spike recovery < warning limit
	K	J	Blind spike recovery < warning limit
	Se	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	CN	UJ	Matrix spike recovery = 67.3%
			Positive reported < lowest std on cal curve
4820	Ba	U	Positives in cal blanks
	Ca	J	Serial dilution percent difference = 13.8%
	Cr	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Fe	U	Positives in cal blanks
	Pb	UJ	Matrix spike recovery = 68.5%
			% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Mn	J	Serial dilution percent difference = 10.4%

May 3, 2001

## INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 29099

Project Number: 01-0528

Site: Latex Construction Company, Thunderbolt GA

Sample No.	Element	Flag	Reason
4821	Al	J	Sample pH 3 when received by lab for analysis
	Sb	J	Sample pH 3 when received by lab for analysis
	As	J	Sample pH 3 when received by lab for analysis
	Ba	J	Sample pH 3 when received by lab for analysis
	Be	J	Sample pH 3 when received by lab for analysis
	Cd	J	Sample pH 3 when received by lab for analysis
	Ca	J	Sample pH 3 when received by lab for analysis
			Serial dilution percent difference = 13.8%
	Cr	J	Sample pH 3 when received by lab for analysis
	Co	J	Sample pH 3 when received by lab for analysis
	Cu	J	Sample pH 3 when received by lab for analysis
	Fe	J	Sample pH 3 when received by lab for analysis
	Pb	J	Sample pH 3 when received by lab for analysis
			Matrix spike recovery = 68.5%
	Mg	J	Sample pH 3 when received by lab for analysis
	Mn	J	Sample pH 3 when received by lab for analysis
			Serial dilution percent difference = 10.4%
	Hg	J	Sample pH 3 when received by lab for analysis
	Ni	J	Sample pH 3 when received by lab for analysis
	K	J	Sample pH 3 when received by lab for analysis
	Se	J	Sample pH 3 when received by lab for analysis
	Ag	J	Sample pH 3 when received by lab for analysis
	Na	J	Sample pH 3 when received by lab for analysis
	Tl	J	Sample pH 3 when received by lab for analysis
	V	J	Sample pH 3 when received by lab for analysis
	Zn	J	Sample pH 3 when received by lab for analysis
	CN	U	Positive reported < lowest std on cal curve



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

## MEMORANDUM

MAY 7 REC'D

Date: 05/02/2001

Subject: Results of METALS Sample Analysis  
01-0529 Latex Construction Co  
Thunderbolt, GA

From: VanCuron, Francine

To: King, CharlesL

CC: Heather Kennedy  
START/TT

Thru: Scifres, Jenny  
Chief, Inorganic Chemistry Section  
Analytical Support Branch

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

Sample 4805 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01SS /

MD No: 0J67

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J67

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 11:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2300	MG/KG	ALUMINUM
0.140U	MG/KG	ANTIMONY
1.7U	MG/KG	ARSENIC
53	MG/KG	BARIUM
0.009R	MG/KG	BERYLLIUM
0.45U	MG/KG	CADMIUM
6100J	MG/KG	CALCIUM
6.1J	MG/KG	CHROMIUM
0.71J	MG/KG	COBALT
41	MG/KG	COPPER
3100	MG/KG	IRON
96J	MG/KG	LEAD
640J	MG/KG	MAGNESIUM
68J	MG/KG	MANGANESE
0.22	MG/KG	TOTAL MERCURY
2.6J	MG/KG	NICKEL
390J	MG/KG	POTASSIUM
1.2U	MG/KG	SELENIUM
0.29U	MG/KG	SILVER
280J	MG/KG	SODIUM
0.81U	MG/KG	THALLIUM
4.9	MG/KG	VANADIUM
330	MG/KG	ZINC
0.64J	MG/KG	CYANIDE
11	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected: the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4776 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SS /

MD No: 0J38

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J38

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:35

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4800J	MG/KG	ALUMINUM
0.86UJ	MG/KG	ANTIMONY
2.6U	MG/KG	ARSENIC
15J	MG/KG	BARIUM
0.10UR	MG/KG	BERYLLIUM
0.10U	MG/KG	CADMIUM
1500J	MG/KG	CALCIUM
6.5	MG/KG	CHROMIUM
1.3J	MG/KG	COBALT
7.3J	MG/KG	COPPER
2800J	MG/KG	IRON
10J	MG/KG	LEAD
420J	MG/KG	MAGNESIUM
32J	MG/KG	MANGANESE
0.07U	MG/KG	TOTAL MERCURY
2.1UJ	MG/KG	NICKEL
280J	MG/KG	POTASSIUM
0.44U	MG/KG	SELENIUM
0.34U	MG/KG	SILVER
310U	MG/KG	SODIUM
0.94U	MG/KG	THALLIUM
7.4J	MG/KG	VANADIUM
30J	MG/KG	ZINC
1.2J	MG/KG	CYANIDE
23	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4780 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SS /

MD No: 0J42

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J42

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2100J	MG/KG	ALUMINUM
0.90J	MG/KG	ANTIMONY
6.2U	MG/KG	ARSENIC
52J	MG/KG	BARIUM
0.09UR	MG/KG	BERYLLIUM
0.99	MG/KG	CADMIUM
620J	MG/KG	CALCIUM
29	MG/KG	CHROMIUM
2.2J	MG/KG	COBALT
190J	MG/KG	COPPER
9200J	MG/KG	IRON
210J	MG/KG	LEAD
220J	MG/KG	MAGNESIUM
100J	MG/KG	MANGANESE
2.4	MG/KG	TOTAL MERCURY
4.8UJ	MG/KG	NICKEL
190J	MG/KG	POTASSIUM
0.50U	MG/KG	SELENIUM
0.65	MG/KG	SILVER
410	MG/KG	SODIUM
0.84U	MG/KG	THALLIUM
5.1J	MG/KG	VANADIUM
540	MG/KG	ZINC
0.52UJ	MG/KG	CYANIDE
14	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4801 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SS /

MD No: 0J63

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J63

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
9500J	MG/KG	ALUMINUM
0.78UJ	MG/KG	ANTIMONY
5.1U	MG/KG	ARSENIC
670J	MG/KG	BARIUM
0.10UR	MG/KG	BERYLLIUM
0.38U	MG/KG	CADMIUM
59000J	MG/KG	CALCIUM
42	MG/KG	CHROMIUM
3.8J	MG/KG	COBALT
920J	MG/KG	COPPER
11000J	MG/KG	IRON
70J	MG/KG	LEAD
2200J	MG/KG	MAGNESIUM
110J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
14J	MG/KG	NICKEL
750J	MG/KG	POTASSIUM
0.55U	MG/KG	SELENIUM
0.31U	MG/KG	SILVER
1300	MG/KG	SODIUM
0.85U	MG/KG	THALLIUM
23J	MG/KG	VANADIUM
600J	MG/KG	ZINC
0.44UJ	MG/KG	CYANIDE
16	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

&lt;-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4788 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SS /

MD No: 0J50

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J50

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:43

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4200J	MG/KG	ALUMINUM
11J	MG/KG	ANTIMONY
7.8U	MG/KG	ARSENIC
95J	MG/KG	BARIUM
0.09UR	MG/KG	BERYLLIUM
0.49U	MG/KG	CADMIUM
1400J	MG/KG	CALCIUM
67	MG/KG	CHROMIUM
4.4J	MG/KG	COBALT
1700J	MG/KG	COPPER
26000J	MG/KG	IRON
370J	MG/KG	LEAD
580J	MG/KG	MAGNESIUM
140J	MG/KG	MANGANESE
0.36	MG/KG	TOTAL MERCURY
35J	MG/KG	NICKEL
450J	MG/KG	POTASSIUM
0.70U	MG/KG	SELENIUM
2.1	MG/KG	SILVER
400	MG/KG	SODIUM
0.76U	MG/KG	THALLIUM
10J	MG/KG	VANADIUM
350J	MG/KG	ZINC
1.3J	MG/KG	CYANIDE
6.0	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4790 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC06SS /

MD No: 0J52

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J52

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 12:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5000J	MG/KG	ALUMINUM
0.69UJ	MG/KG	ANTIMONY
1.6U	MG/KG	ARSENIC
120J	MG/KG	BARIUM
0.08UR	MG/KG	BERYLLIUM
0.14U	MG/KG	CADMIUM
3100J	MG/KG	CALCIUM
22	MG/KG	CHROMIUM
4.4J	MG/KG	COBALT
490J	MG/KG	COPPER
7400J	MG/KG	IRON
92J	MG/KG	LEAD
700J	MG/KG	MAGNESIUM
58J	MG/KG	MANGANESE
0.05U	MG/KG	TOTAL MERCURY
18J	MG/KG	NICKEL
570J	MG/KG	POTASSIUM
0.36U	MG/KG	SELENIUM
0.27U	MG/KG	SILVER
600	MG/KG	SODIUM
0.76U	MG/KG	THALLIUM
13J	MG/KG	VANADIUM
350J	MG/KG	ZINC
0.26UJ	MG/KG	CYANIDE
5.0	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4795 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SS /

MD No: 0J57

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J57

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:45

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5100J	MG/KG	ALUMINUM
2.3J	MG/KG	ANTIMONY
4.1U	MG/KG	ARSENIC
290J	MG/KG	BARIUM
0.09UR	MG/KG	BERYLLIUM
0.18U	MG/KG	CADMIUM
4100J	MG/KG	CALCIUM
25	MG/KG	CHROMIUM
2.8J	MG/KG	COBALT
310J	MG/KG	COPPER
8600J	MG/KG	IRON
64J	MG/KG	LEAD
1000J	MG/KG	MAGNESIUM
93J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
6.9UJ	MG/KG	NICKEL
710J	MG/KG	POTASSIUM
0.50U	MG/KG	SELENIUM
0.29U	MG/KG	SILVER
390J	MG/KG	SODIUM
0.80U	MG/KG	THALLIUM
17J	MG/KG	VANADIUM
350J	MG/KG	ZINC
0.42UJ	MG/KG	CYANIDE
10	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4803 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SS /

MD No: 0J65

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J65

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
9200	MG/KG	ALUMINUM
6.2J	MG/KG	ANTIMONY
16U	MG/KG	ARSENIC
790	MG/KG	BARIUM
0.09UR	MG/KG	BERYLLIUM
0.99	MG/KG	CADMIUM
10000J	MG/KG	CALCIUM
110J	MG/KG	CHROMIUM
11J	MG/KG	COBALT
13000	MG/KG	COPPER
19000	MG/KG	IRON
340J	MG/KG	LEAD
3400J	MG/KG	MAGNESIUM
260J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
37J	MG/KG	NICKEL
2800J	MG/KG	POTASSIUM
0.52U	MG/KG	SELENIUM
0.88	MG/KG	SILVER
1300	MG/KG	SODIUM
0.82U	MG/KG	THALLIUM
41	MG/KG	VANADIUM
1800	MG/KG	ZINC
0.08UJ	MG/KG	CYANIDE
12	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4778 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SS /

MD No: 0J40

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J40

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:40

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3600J	MG/KG	ALUMINUM
2.1J	MG/KG	ANTIMONY
29	MG/KG	ARSENIC
390J	MG/KG	BARIUM
0.11UR	MG/KG	BERYLLIUM
0.77	MG/KG	CADMIUM
22000J	MG/KG	CALCIUM
68	MG/KG	CHROMIUM
8.2J	MG/KG	COBALT
1900J	MG/KG	COPPER
35000J	MG/KG	IRON
340J	MG/KG	LEAD
2400J	MG/KG	MAGNESIUM
330J	MG/KG	MANGANESE
0.07U	MG/KG	TOTAL MERCURY
36J	MG/KG	NICKEL
720J	MG/KG	POTASSIUM
1.4U	MG/KG	SELENIUM
2.0	MG/KG	SILVER
1600	MG/KG	SODIUM
1.0U	MG/KG	THALLIUM
10J	MG/KG	VANADIUM
1400J	MG/KG	ZINC
1.4J	MG/KG	CYANIDE
27	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4806 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01SB /

MD No: 0J68

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J68

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 11:30

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6100	MG/KG	ALUMINUM
0.73U	MG/KG	ANTIMONY
0.86U	MG/KG	ARSENIC
5.5	MG/KG	BARIUM
0.09U	MG/KG	BERYLLIUM
0.09U	MG/KG	CADMIUM
280J	MG/KG	CALCIUM
5.9J	MG/KG	CHROMIUM
0.45U	MG/KG	COBALT
1.5U	MG/KG	COPPER
1600	MG/KG	IRON
13J	MG/KG	LEAD
90U	MG/KG	MAGNESIUM
3.7J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
0.73J	MG/KG	NICKEL
120J	MG/KG	POTASSIUM
0.38U	MG/KG	SELENIUM
0.29U	MG/KG	SILVER
260U	MG/KG	SODIUM
0.80U	MG/KG	THALLIUM
3.6	MG/KG	VANADIUM
9.0	MG/KG	ZINC
0.22U	MG/KG	CYANIDE
10	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4777 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SB /

MD No: 0J39

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J39

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 12:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5700J	MG/KG	ALUMINUM
0.84UJ	MG/KG	ANTIMONY
4.0U	MG/KG	ARSENIC
30J	MG/KG	BARIUM
0.10UR	MG/KG	BERYLLIUM
0.10U	MG/KG	CADMIUM
2900J	MG/KG	CALCIUM
11	MG/KG	CHROMIUM
2.3J	MG/KG	COBALT
5.6J	MG/KG	COPPER
7700J	MG/KG	IRON
19J	MG/KG	LEAD
910J	MG/KG	MAGNESIUM
26J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
2.6UJ	MG/KG	NICKEL
1100J	MG/KG	POTASSIUM
0.58U	MG/KG	SELENIUM
0.39	MG/KG	SILVER
300U	MG/KG	SODIUM
1.2U	MG/KG	THALLIUM
12J	MG/KG	VANADIUM
20J	MG/KG	ZINC
8.7J	MG/KG	CYANIDE
21	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4781 FY 2001 Project: 01-0528

Produced by: Goddard, Denise

## METALS SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 03/30/2001 16:20

Id/Station: LC03SB /

MD No: 0J43

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J43

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2500J	MG/KG	ALUMINUM
0.89UJ	MG/KG	ANTIMONY
0.84U	MG/KG	ARSENIC
14J	MG/KG	BARIUM
0.11UR	MG/KG	BERYLLIUM
0.11U	MG/KG	CADMIUM
460J	MG/KG	CALCIUM
3.8	MG/KG	CHROMIUM
0.48UJ	MG/KG	COBALT
3.8J	MG/KG	COPPER
1300J	MG/KG	IRON
7.0J	MG/KG	LEAD
130J	MG/KG	MAGNESIUM
16J	MG/KG	MANGANESE
0.07U	MG/KG	TOTAL MERCURY
0.65UJ	MG/KG	NICKEL
100J	MG/KG	POTASSIUM
0.46U	MG/KG	SELENIUM
0.35U	MG/KG	SILVER
320U	MG/KG	SODIUM
0.97U	MG/KG	THALLIUM
2.4J	MG/KG	VANADIUM
13J	MG/KG	ZINC
2.3J	MG/KG	CYANIDE
26	%	% MOISTURE

U-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

U-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4802 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SB /

MD No: 0J64

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J64

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:40

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6200	MG/KG	ALUMINUM
3.5J	MG/KG	ANTIMONY
2.7U	MG/KG	ARSENIC
85	MG/KG	BARIUM
1.6J	MG/KG	BERYLLIUM
0.29	MG/KG	CADMIUM
8700J	MG/KG	CALCIUM
56J	MG/KG	CHROMIUM
15J	MG/KG	COBALT
880	MG/KG	COPPER
22000	MG/KG	IRON
780	MG/KG	LEAD
930J	MG/KG	MAGNESIUM
160J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
86J	MG/KG	NICKEL
1100J	MG/KG	POTASSIUM
0.64U	MG/KG	SELENIUM
1.0	MG/KG	SILVER
1200	MG/KG	SODIUM
0.83U	MG/KG	THALLIUM
11	MG/KG	VANADIUM
1600	MG/KG	ZINC
0.08UJ	MG/KG	CYANIDE
14	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4789 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SB /

MD No: 0J51

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J51

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
760J	MG/KG	ALUMINUM
0.72UJ	MG/KG	ANTIMONY
0.81U	MG/KG	ARSENIC
7.8J	MG/KG	BARIUM
0.09UR	MG/KG	BERYLLIUM
0.09U	MG/KG	CADMIUM
3500J	MG/KG	CALCIUM
2.8	MG/KG	CHROMIUM
0.65J	MG/KG	COBALT
9.5J	MG/KG	COPPER
1100J	MG/KG	IRON
2.9J	MG/KG	LEAD
120J	MG/KG	MAGNESIUM
14J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
1.8UJ	MG/KG	NICKEL
110J	MG/KG	POTASSIUM
0.37U	MG/KG	SELENIUM
0.28U	MG/KG	SILVER
260U	MG/KG	SODIUM
0.79U	MG/KG	THALLIUM
2.3J	MG/KG	VANADIUM
48J	MG/KG	ZINC
1.7J	MG/KG	CYANIDE
9.0	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4791 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC06SB /

MD No: 0J53

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J53

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 12:25

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4900J	MG/KG	ALUMINUM
2.1J	MG/KG	ANTIMONY
6.4U	MG/KG	ARSENIC
91J	MG/KG	BARIUM
0.81J	MG/KG	BERYLLIUM
0.36U	MG/KG	CADMIUM
4600J	MG/KG	CALCIUM
57	MG/KG	CHROMIUM
20J	MG/KG	COBALT
1000J	MG/KG	COPPER
20000J	MG/KG	IRON
760J	MG/KG	LEAD
710J	MG/KG	MAGNESIUM
150J	MG/KG	MANGANESE
0.07U	MG/KG	TOTAL MERCURY
100J	MG/KG	NICKEL
520J	MG/KG	POTASSIUM
0.67U	MG/KG	SELENIUM
1.1	MG/KG	SILVER
1300	MG/KG	SODIUM
0.78U	MG/KG	THALLIUM
9.5J	MG/KG	VANADIUM
1600J	MG/KG	ZINC
0.08UJ	MG/KG	CYANIDE
7.0	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4796 FY 2001 Project: 01-0528

**METALS SCAN**

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SB /

MD No: 0J58

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (> 12")

D No: 0J58

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2800J	MG/KG	ALUMINUM
0.76UJ	MG/KG	ANTIMONY
2.3U	MG/KG	ARSENIC
12J	MG/KG	BARIUM
0.09UR	MG/KG	BERYLLIUM
0.09U	MG/KG	CADMIUM
1400J	MG/KG	CALCIUM
6.0	MG/KG	CHROMIUM
1.4J	MG/KG	COBALT
7.6J	MG/KG	COPPER
3600J	MG/KG	IRON
9.4J	MG/KG	LEAD
480J	MG/KG	MAGNESIUM
32J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
1.9UJ	MG/KG	NICKEL
330J	MG/KG	POTASSIUM
0.39U	MG/KG	SELENIUM
0.30U	MG/KG	SILVER
270U	MG/KG	SODIUM
0.83U	MG/KG	THALLIUM
6.8J	MG/KG	VANADIUM
28J	MG/KG	ZINC
4.6J	MG/KG	CYANIDE
13	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4804 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SB /

MD No: 0J66

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J66

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3900	MG/KG	ALUMINUM
1.4J	MG/KG	ANTIMONY
71	MG/KG	ARSENIC
67	MG/KG	BARIUM
0.10UR	MG/KG	BERYLLIUM
0.20	MG/KG	CADMIUM
87000J	MG/KG	CALCIUM
170J	MG/KG	CHROMIUM
1.4J	MG/KG	COBALT
370	MG/KG	COPPER
6800	MG/KG	IRON
71J	MG/KG	LEAD
1900J	MG/KG	MAGNESIUM
110J	MG/KG	MANGANESE
0.06U	MG/KG	TOTAL MERCURY
8.1J	MG/KG	NICKEL
780J	MG/KG	POTASSIUM
0.42U	MG/KG	SELENIUM
0.32U	MG/KG	SILVER
660	MG/KG	SODIUM
0.90U	MG/KG	THALLIUM
17	MG/KG	VANADIUM
260	MG/KG	ZINC
0.20UJ	MG/KG	CYANIDE
20	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4779 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SB /

MD No: 0J41

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J41

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 12:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4000J	MG/KG	ALUMINUM
0.88UJ	MG/KG	ANTIMONY
3.1U	MG/KG	ARSENIC
10J	MG/KG	BARIUM
0.11UR	MG/KG	BERYLLIUM
0.11U	MG/KG	CADMIUM
9700J	MG/KG	CALCIUM
9.0	MG/KG	CHROMIUM
1.3J	MG/KG	COBALT
13J	MG/KG	COPPER
4200J	MG/KG	IRON
6.9J	MG/KG	LEAD
1200J	MG/KG	MAGNESIUM
49J	MG/KG	MANGANESE
0.07U	MG/KG	TOTAL MERCURY
2.8UJ	MG/KG	NICKEL
460J	MG/KG	POTASSIUM
0.45U	MG/KG	SELENIUM
0.35U	MG/KG	SILVER
650	MG/KG	SODIUM
0.96U	MG/KG	THALLIUM
10J	MG/KG	VANADIUM
20J	MG/KG	ZINC
0.09UJ	MG/KG	CYANIDE
25	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4820 FY 2001 Project: 01-0528

Produced by: Goddard, Denise

## METALS SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/04/2001 11:25

Id/Station: LC01GW /

MD No: 0J82

Inorg Contractor: SENTIN

Ending:

Media: GROUNDWATER

D No: 0J82

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
1700	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
100	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
39000J	UG/L	CALCIUM
2.8U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
16	UG/L	COPPER
250U	UG/L	IRON
2.70U	UG/L	LEAD
4600	UG/L	MAGNESIUM
5.9J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
4.0	UG/L	NICKEL
4600	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
66000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
2.9	UG/L	VANADIUM
17	UG/L	ZINC
20	UG/L	CYANIDE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4782 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02GW /

MD No: 0J44

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J44

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE
490	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
4.2U	UG/L	ARSENIC
76	UG/L	BARIUM
0.70	UG/L	BERYLLIUM
2.1U	UG/L	CADMIUM
240000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
4.0	UG/L	COPPER
1400	UG/L	IRON
2.5UJ	UG/L	LEAD
540000	UG/L	MAGNESIUM
120J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.8U	UG/L	NICKEL
190000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
4100000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
8.5	UG/L	VANADIUM
24	UG/L	ZINC
20	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4821 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03GW /

MD No: 0J83

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J83

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/04/2001 12:10

Ending:

RESULTS	UNITS	ANALYTE
1600J	UG/L	ALUMINUM
3.3UJ	UG/L	ANTIMONY
2.3UJ	UG/L	ARSENIC
12J	UG/L	BARIUM
0.40UJ	UG/L	BERYLLIUM
0.40UJ	UG/L	CADMIUM
190000J	UG/L	CALCIUM
1.6UJ	UG/L	CHROMIUM
1.8UJ	UG/L	COBALT
2.3UJ	UG/L	COPPER
12000J	UG/L	IRON
2.5UJ	UG/L	LEAD
30000J	UG/L	MAGNESIUM
290J	UG/L	MANGANESE
0.10UJ	UG/L	TOTAL MERCURY
2.0UJ	UG/L	NICKEL
12000J	UG/L	POTASSIUM
1.7UJ	UG/L	SELENIUM
1.3UJ	UG/L	SILVER
290000J	UG/L	SODIUM
3.6UJ	UG/L	THALLIUM
3.2J	UG/L	VANADIUM
7.9J	UG/L	ZINC
10U	UG/L	CYANIDE

SAMPLES PH 3.0 WHEN RECEIVED BY LAB FOR METALS ANALYSIS

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

!-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4811 FY 2001 Project: 01-0528

Produced by: Goddard, Denise

## METALS SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 14:01

Id/Station: LC04GW /

MD No: 0J73

Inorg Contractor: SENTIN

Ending:

Media: GROUNDWATER

D No: 0J73

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
130U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
26U	UG/L	ARSENIC
36	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
10	UG/L	CADMIUM
170000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
11	UG/L	COPPER
6200	UG/L	IRON
2.5UJ	UG/L	LEAD
33000	UG/L	MAGNESIUM
470J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
7.9	UG/L	NICKEL
34000	UG/L	POTASSIUM
2.6U	UG/L	SELENIUM
1.3U	UG/L	SILVER
220000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
27	UG/L	VANADIUM
85	UG/L	ZINC
10U	UG/L	CYANIDE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4808 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC06GW /

MD No: 0J70

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J70

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:35

Ending:

RESULTS	UNITS	ANALYTE
2900	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
5.9U	UG/L	ARSENIC
160	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
190000J	UG/L	CALCIUM
16	UG/L	CHROMIUM
1.8U	UG/L	COBALT
330	UG/L	COPPER
6000	UG/L	IRON
86J	UG/L	LEAD
120000	UG/L	MAGNESIUM
720J	UG/L	MANGANESE
0.16U	UG/L	TOTAL MERCURY
11	UG/L	NICKEL
63000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
1000000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
16	UG/L	VANADIUM
300	UG/L	ZINC
10U	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

Z-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4783 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07GW /

MD No: 0J45

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J45

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE
620J	UG/L	ALUMINUM
3.3UJ	UG/L	ANTIMONY
7.1UJ	UG/L	ARSENIC
55J	UG/L	BARIUM
0.40UJ	UG/L	BERYLLIUM
0.40UJ	UG/L	CADMIUM
170000J	UG/L	CALCIUM
1.6UJ	UG/L	CHROMIUM
1.8UJ	UG/L	COBALT
2.3UJ	UG/L	COPPER
5600J	UG/L	IRON
2.5UJ	UG/L	LEAD
11000J	UG/L	MAGNESIUM
55J	UG/L	MANGANESE
0.10UJ	UG/L	TOTAL MERCURY
2.1J	UG/L	NICKEL
7500J	UG/L	POTASSIUM
4.3UJ	UG/L	SELENIUM
1.3UJ	UG/L	SILVER
16000J	UG/L	SODIUM
3.6UJ	UG/L	THALLIUM
8.3J	UG/L	VANADIUM
14J	UG/L	ZINC
36	UG/L	CYANIDE

PH 7.0 WHEN RECEIVED FOR METALS ANALYSIS

v-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

?-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4784 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09GW /

MD No: 0J46

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J46

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 09:55

Ending:

RESULTS	UNITS	ANALYTE
435	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
8.0U	UG/L	ARSENIC
140	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
1.6U	UG/L	CADMIUM
90000J	UG/L	CALCIUM
1.7U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
120	UG/L	COPPER
4100	UG/L	IRON
7.6J	UG/L	LEAD
110000	UG/L	MAGNESIUM
130J	UG/L	MANGANESE
0.18U	UG/L	TOTAL MERCURY
3.6	UG/L	NICKEL
73000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
1230000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
15	UG/L	VANADIUM
97	UG/L	ZINC
10	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4365 FY 2001 Project: 01-0529

## METALS SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC01MW /

Media: GROUNDWATER

Produced by: VanCuron, Francine

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:40

Ending:

RESULTS	UNITS	ANALYTE
5.0U	UG/L	SILVER
0.50U	UG/L	ARSENIC
NA	UG/L	BORON
12	UG/L	BARIUM
0.75U	UG/L	BERYLLIUM
0.25U	UG/L	CADMIUM
1.2U	UG/L	COBALT
1.2U	UG/L	CHROMIUM
9.9	UG/L	COPPER
2.5U	UG/L	MOLYBDENUM
2.5U	UG/L	NICKEL
0.60	UG/L	LEAD
0.25U	UG/L	ANTIMONY
1.0U	UG/L	SELENIUM
5.0U	UG/L	TIN
370	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
2.5U	UG/L	TITANIUM
0.25U	UG/L	THALLIUM
1.2U	UG/L	VANADIUM
0.75U	UG/L	YTTRIUM
31	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
25U	UG/L	ALUMINUM
2.5U	UG/L	MANGANESE
28	MG/L	CALCIUM
9.8	MG/L	MAGNESIUM
0.059	MG/L	IRON
20	MG/L	SODIUM
2.6	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4364 FY 2001 Project: 01-0529

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Id/Station: LC02MW /

Media: GROUNDWATER

Produced by: VanCuron, Francine

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

RESULTS	UNITS	ANALYTE
5.0U	UG/L	SILVER
0.50U	UG/L	ARSENIC
NA	UG/L	BORON
13A	UG/L	BARIUM
0.75U	UG/L	BERYLLIUM
0.25U	UG/L	CADMIUM
1.2U	UG/L	COBALT
1.2U	UG/L	CHROMIUM
5.0U	UG/L	COPPER
2.5U	UG/L	MOLYBDENUM
2.5U	UG/L	NICKEL
0.50U	UG/L	LEAD
0.25U	UG/L	ANTIMONY
1.0U	UG/L	SELENIUM
5.0U	UG/L	TIN
340A	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
2.5U	UG/L	TITANIUM
0.25U	UG/L	THALLIUM
1.2U	UG/L	VANADIUM
0.75U	UG/L	YTTRIUM
7.5A	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
25U	UG/L	ALUMINUM
2.5U	UG/L	MANGANESE
25A	MG/L	CALCIUM
8.9A	MG/L	MAGNESIUM
0.025U	MG/L	IRON
16A	MG/L	SODIUM
2.2A	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4816 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01SW /

MD No: 0J78

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J78

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

RESULTS	UNITS	ANALYTE
220U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
14	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
190000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
2.5	UG/L	COPPER
64U	UG/L	IRON
2.5UJ	UG/L	LEAD
650000	UG/L	MAGNESIUM
17J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
240000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
5500000	UG/L	SODIUM
4.8U	UG/L	THALLIUM
1.7U	UG/L	VANADIUM
6.3	UG/L	ZINC
1.18	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4817 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01ASW /

MD No: 0J79

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J79

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

RESULTS	UNITS	ANALYTE
220U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
15	UG/L	BARIUM
0.49	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
200000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
2.6U	UG/L	COPPER
54U	UG/L	IRON
2.5UJ	UG/L	LEAD
650000	UG/L	MAGNESIUM
18J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
240000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
5500000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
1.7U	UG/L	VANADIUM
7.9	UG/L	ZINC
21	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4812 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SW /

MD No: 0J74

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J74

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:30

Ending:

RESULTS	UNITS	ANALYTE
330	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
16	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
200000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
6.7	UG/L	COPPER
140U	UG/L	IRON
2.5UJ	UG/L	LEAD
660000	UG/L	MAGNESIUM
20J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
240000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
5400000	UG/L	SODIUM
5.3U	UG/L	THALLIUM
1.7	UG/L	VANADIUM
9.6	UG/L	ZINC
27	UG/L	CYANIDE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4813 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SW /

MD No: 0J75

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J75

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:45

Ending:

RESULTS	UNITS	ANALYTE
320U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
15	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
200000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
3.9	UG/L	COPPER
150U	UG/L	IRON
2.5UJ	UG/L	LEAD
670000	UG/L	MAGNESIUM
20J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
240000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
5700000	UG/L	SODIUM
4.8U	UG/L	THALLIUM
1.8	UG/L	VANADIUM
6.7	UG/L	ZINC
21	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4814 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SW /

MD No: 0J76

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J76

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:20

Ending:

RESULTS	UNITS	ANALYTE
260U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
16	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
200000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
4.4	UG/L	COPPER
98U	UG/L	IRON
2.5UJ	UG/L	LEAD
680000	UG/L	MAGNESIUM
18J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
250000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
5800000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
1.8	UG/L	VANADIUM
8.0	UG/L	ZINC
12	UG/L	CYANIDE

v-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

L-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4800 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SW /

MD No: 0J62

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J62

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

RESULTS	UNITS	ANALYTE
308	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
17	UG/L	BARIUM
0.57U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
190000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
3.0	UG/L	COPPER
110U	UG/L	IRON
2.5UJ	UG/L	LEAD
640000	UG/L	MAGNESIUM
35J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
240000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
5420000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
1.7	UG/L	VANADIUM
15	UG/L	ZINC
21	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4785 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SW /

MD No: 0J47

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J47

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:05

Ending:

RESULTS	UNITS	ANALYTE
203	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
17	UG/L	BARIUM
0.56	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
170000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
3.4	UG/L	COPPER
170U	UG/L	IRON
2.5UJ	UG/L	LEAD
580000	UG/L	MAGNESIUM
27J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
220000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
4600000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
1.8	UG/L	VANADIUM
10	UG/L	ZINC
32	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4792 FY 2001 Project: 01-0528

Produced by: Goddard, Denise

## METALS SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 12:40

Id/Station: LC09SW /

MD No: 0J54

Inorg Contractor: SENTIN

Ending:

Media: SURFACE WATER

D No: 0J54

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
200U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
17	UG/L	BARIUM
0.48	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
170000J	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
3.1	UG/L	COPPER
150U	UG/L	IRON
2.5UJ	UG/L	LEAD
56000	UG/L	MAGNESIUM
28J	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
210000	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
4500000	UG/L	SODIUM
3.6U	UG/L	THALLIUM
1.8	UG/L	VANADIUM
14	UG/L	ZINC
38	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4818 FY 2001 Project: 01-0528

Produced by: Goddard, Denise

## METALS SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 17:15

Id/Station: LC01SD /

MD No: 0J80

Inorg Contractor: SENTIN

Ending:

Media: SEDIMENT

D No: 0J80

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5400	MG/KG	ALUMINUM
1.00U	MG/KG	ANTIMONY
3.7U	MG/KG	ARSENIC
9.6	MG/KG	BARIUM
0.12UR	MG/KG	BERYLLIUM
0.12U	MG/KG	CADMIUM
570J	MG/KG	CALCIUM
10J	MG/KG	CHROMIUM
1.4J	MG/KG	COBALT
6.2U	MG/KG	COPPER
6000	MG/KG	IRON
12J	MG/KG	LEAD
1400J	MG/KG	MAGNESIUM
89J	MG/KG	MANGANESE
0.08U	MG/KG	TOTAL MERCURY
2.5J	MG/KG	NICKEL
890J	MG/KG	POTASSIUM
0.52U	MG/KG	SELENIUM
0.40U	MG/KG	SILVER
3400	MG/KG	SODIUM
1.1U	MG/KG	THALLIUM
17	MG/KG	VANADIUM
15	MG/KG	ZINC
0.11UJ	MG/KG	CYANIDE
35	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4799 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SD /

MD No: 0J61

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J61

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:30

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6200J	MG/KG	ALUMINUM
0.98UJ	MG/KG	ANTIMONY
5.5U	MG/KG	ARSENIC
120J	MG/KG	BARIUM
0.12UR	MG/KG	BERYLLIUM
0.12U	MG/KG	CADMIUM
2500J	MG/KG	CALCIUM
17	MG/KG	CHROMIUM
2.6J	MG/KG	COBALT
190J	MG/KG	COPPER
8200J	MG/KG	IRON
20	MG/KG	LEAD
1800J	MG/KG	MAGNESIUM
91J	MG/KG	MANGANESE
0.07U	MG/KG	TOTAL MERCURY
4.7UJ	MG/KG	NICKEL
1100J	MG/KG	POTASSIUM
0.51U	MG/KG	SELENIUM
0.39U	MG/KG	SILVER
3000	MG/KG	SODIUM
1.1U	MG/KG	THALLIUM
18J	MG/KG	VANADIUM
86J	MG/KG	ZINC
0.11UJ	MG/KG	CYANIDE
34	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4798 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SD /

MD No: 0J60

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J60

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
21000J	MG/KG	ALUMINUM
1.7UJ	MG/KG	ANTIMONY
16U	MG/KG	ARSENIC
44J	MG/KG	BARIUM
0.20UR	MG/KG	BERYLLIUM
0.20U	MG/KG	CADMIUM
1800J	MG/KG	CALCIUM
40	MG/KG	CHROMIUM
6.6J	MG/KG	COBALT
130J	MG/KG	COPPER
24000J	MG/KG	IRON
88J	MG/KG	LEAD
4900J	MG/KG	MAGNESIUM
270J	MG/KG	MANGANESE
1.5	MG/KG	TOTAL MERCURY
10UJ	MG/KG	NICKEL
3200J	MG/KG	POTASSIUM
1.5U	MG/KG	SELENIUM
1.1U	MG/KG	SILVER
12000	MG/KG	SODIUM
1.8U	MG/KG	THALLIUM
56J	MG/KG	VANADIUM
150J	MG/KG	ZINC
0.37UJ	MG/KG	CYANIDE
60	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4797 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SD /

MD No: 0J59

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J59

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 18:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
14000J	MG/KG	ALUMINUM
1.5J	MG/KG	ANTIMONY
5.9U	MG/KG	ARSENIC
280J	MG/KG	BARIUM
0.60J	MG/KG	BERYLLIUM
0.13U	MG/KG	CADMIUM
5300J	MG/KG	CALCIUM
48	MG/KG	CHROMIUM
11J	MG/KG	COBALT
510J	MG/KG	COPPER
22000J	MG/KG	IRON
320J	MG/KG	LEAD
2900J	MG/KG	MAGNESIUM
200J	MG/KG	MANGANESE
0.09U	MG/KG	TOTAL MERCURY
59J	MG/KG	NICKEL
2100J	MG/KG	POTASSIUM
1.7U	MG/KG	SELENIUM
0.79	MG/KG	SILVER
5200	MG/KG	SODIUM
1.2U	MG/KG	THALLIUM
38J	MG/KG	VANADIUM
740J	MG/KG	ZINC
0.27UJ	MG/KG	CYANIDE
40	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

G-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

Z-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4815 FY 2001 Project: 01-0528

Produced by: Goddard, Denise

## METALS SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 15:05

Id/Station: LC05SD /

MD No: 0J77

Inorg Contractor: SENTIN

Ending:

Media: SEDIMENT

D No: 0J77

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
22000	MG/KG	ALUMINUM
2.5UJ	MG/KG	ANTIMONY
13U	MG/KG	ARSENIC
27	MG/KG	BARIUM
0.20UR	MG/KG	BERYLLIUM
0.20U	MG/KG	CADMIUM
4500J	MG/KG	CALCIUM
34J	MG/KG	CHROMIUM
6.6J	MG/KG	COBALT
16	MG/KG	COPPER
26000	MG/KG	IRON
22J	MG/KG	LEAD
4300J	MG/KG	MAGNESIUM
270J	MG/KG	MANGANESE
0.13U	MG/KG	TOTAL MERCURY
9.5J	MG/KG	NICKEL
3200J	MG/KG	POTASSIUM
1.2U	MG/KG	SELENIUM
0.98U	MG/KG	SILVER
9800	MG/KG	SODIUM
1.8U	MG/KG	THALLIUM
65	MG/KG	VANADIUM
47	MG/KG	ZINC
0.18UJ	MG/KG	CYANIDE
61	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4809 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: ~~LC08SD~~ *Actually, LC-06-SD  
(see logbook No. 1, p. 24)*

MD No: 0J71

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J71

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 12:30 → LC-06-SD *AK*

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
20000	MG/KG	ALUMINUM
2.9J	MG/KG	ANTIMONY
16U	MG/KG	ARSENIC
28	MG/KG	BARIUM
0.24UR	MG/KG	BERYLLIUM
0.24U	MG/KG	CADMIUM
2100J	MG/KG	CALCIUM
43J	MG/KG	CHROMIUM
7.2J	MG/KG	COBALT
20	MG/KG	COPPER
28000	MG/KG	IRON
24J	MG/KG	LEAD
5800J	MG/KG	MAGNESIUM
260J	MG/KG	MANGANESE
0.15U	MG/KG	TOTAL MERCURY
11J	MG/KG	NICKEL
3900J	MG/KG	POTASSIUM
1.9U	MG/KG	SELENIUM
1.0	MG/KG	SILVER
13000	MG/KG	SODIUM
2.2U	MG/KG	THALLIUM
67	MG/KG	VANADIUM
64	MG/KG	ZINC
0.21UJ	MG/KG	CYANIDE
67	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4810 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SD /

MD No: 0J72

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J72

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 13:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5200	MG/KG	ALUMINUM
<del>1.0UJ</del>	<del>MG/KG</del>	<del>ANTIMONY</del>
6.1U	MG/KG	ARSENIC
8.7	MG/KG	BARIUM
0.12UR	MG/KG	BERYLLIUM
0.12U	MG/KG	CADMIUM
1100J	MG/KG	CALCIUM
12J	MG/KG	CHROMIUM
2.0J	MG/KG	COBALT
<del>3.55U</del>	<del>MG/KG</del>	<del>COPPER</del>
8900	MG/KG	IRON
6.7J	MG/KG	LEAD
1600J	MG/KG	MAGNESIUM
72J	MG/KG	MANGANESE
0.08U	MG/KG	TOTAL MERCURY
2.6J	MG/KG	NICKEL
1000J	MG/KG	POTASSIUM
0.53U	MG/KG	SELENIUM
<del>20.40U</del>	<del>MG/KG</del>	<del>SILVER</del>
3700	MG/KG	SODIUM
1.1U	MG/KG	THALLIUM
17	MG/KG	VANADIUM
20	MG/KG	ZINC
0.11UJ	MG/KG	CYANIDE
35	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4786 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SD /

MD No: 0J48

Media: SEDIMENT

D No: 0J48

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
30000J	MG/KG	ALUMINUM
3.0UJ	MG/KG	ANTIMONY
16U	MG/KG	ARSENIC
42J	MG/KG	BARIUM
0.36UR	MG/KG	BERYLLIUM
0.36U	MG/KG	CADMIUM
4700J	MG/KG	CALCIUM
51	MG/KG	CHROMIUM
8.9J	MG/KG	COBALT
23J	MG/KG	COPPER
31000J	MG/KG	IRON
23J	MG/KG	LEAD
7900J	MG/KG	MAGNESIUM
470J	MG/KG	MANGANESE
0.23U	MG/KG	TOTAL MERCURY
13UJ	MG/KG	NICKEL
5100J	MG/KG	POTASSIUM
1.5U	MG/KG	SELENIUM
1.2U	MG/KG	SILVER
26000	MG/KG	SODIUM
3.2U	MG/KG	THALLIUM
73J	MG/KG	VANADIUM
76J	MG/KG	ZINC
0.32UJ	MG/KG	CYANIDE
78	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4793 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SD /

MD No: 0J55

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J55

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 13:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
24000J	MG/KG	ALUMINUM
2.7UJ	MG/KG	ANTIMONY
15U	MG/KG	ARSENIC
36J	MG/KG	BARIUM
0.33UR	MG/KG	BERYLLIUM
0.33U	MG/KG	CADMIUM
5200J	MG/KG	CALCIUM
45	MG/KG	CHROMIUM
7.5J	MG/KG	COBALT
20J	MG/KG	COPPER
29000J	MG/KG	IRON
21J	MG/KG	LEAD
7200J	MG/KG	MAGNESIUM
470J	MG/KG	MANGANESE
0.21U	MG/KG	TOTAL MERCURY
12UJ	MG/KG	NICKEL
4400J	MG/KG	POTASSIUM
1.4U	MG/KG	SELENIUM
1.5	MG/KG	SILVER
24000J	MG/KG	SODIUM
4.1U	MG/KG	THALLIUM
68J	MG/KG	VANADIUM
72J	MG/KG	ZINC
0.29UJ	MG/KG	CYANIDE
76	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4794 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC10SD /

MD No: 0J56

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J56

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5200J	MG/KG	ALUMINUM
1.0UJ	MG/KG	ANTIMONY
3.9U	MG/KG	ARSENIC
8.7J	MG/KG	BARIUM
0.12UR	MG/KG	BERYLLIUM
0.12U	MG/KG	CADMIUM
7500J	MG/KG	CALCIUM
10	MG/KG	CHROMIUM
1.8J	MG/KG	COBALT
5.5J	MG/KG	COPPER
7200J	MG/KG	IRON
5.2J	MG/KG	LEAD
1600J	MG/KG	MAGNESIUM
86J	MG/KG	MANGANESE
0.08U	MG/KG	TOTAL MERCURY
2.7UJ	MG/KG	NICKEL
940J	MG/KG	POTASSIUM
0.52U	MG/KG	SELENIUM
0.40U	MG/KG	SILVER
4200	MG/KG	SODIUM
1.1U	MG/KG	THALLIUM
15J	MG/KG	VANADIUM
21J	MG/KG	ZINC
0.11UJ	MG/KG	CYANIDE
35	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4807 FY 2001 Project: 01-0528

Produced by: Goddard, Denise

## METALS SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 10:45

Id/Station: LC11SD /

MD No: 0J69

Inorg Contractor: SENTIN

Ending:

Media: SEDIMENT

D No: 0J69

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4400	MG/KG	ALUMINUM
0.91UJ	MG/KG	ANTIMONY
5.1U	MG/KG	ARSENIC
7.7	MG/KG	BARIUM
0.11UR	MG/KG	BERYLLIUM
0.11U	MG/KG	CADMIUM
1500J	MG/KG	CALCIUM
11J	MG/KG	CHROMIUM
2.0J	MG/KG	COBALT
5.7J	MG/KG	COPPER
8400	MG/KG	IRON
6.2J	MG/KG	LEAD
1600J	MG/KG	MAGNESIUM
84J	MG/KG	MANGANESE
0.07U	MG/KG	TOTAL MERCURY
2.6J	MG/KG	NICKEL
950J	MG/KG	POTASSIUM
0.96U	MG/KG	SELENIUM
0.36U	MG/KG	SILVER
3500	MG/KG	SODIUM
0.99U	MG/KG	THALLIUM
18	MG/KG	VANADIUM
23	MG/KG	ZINC
0.10UJ	MG/KG	CYANIDE
28	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4819 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC12SD /

MD No: 0J81

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J81

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
14000	MG/KG	ALUMINUM
1.6UJ	MG/KG	ANTIMONY
10U	MG/KG	ARSENIC
36	MG/KG	BARIUM
0.15UR	MG/KG	BERYLLIUM
0.15U	MG/KG	CADMIUM
1500J	MG/KG	CALCIUM
28J	MG/KG	CHROMIUM
4.9J	MG/KG	COBALT
44	MG/KG	COPPER
18000	MG/KG	IRON
30J	MG/KG	LEAD
3700J	MG/KG	MAGNESIUM
330J	MG/KG	MANGANESE
0.09U	MG/KG	TOTAL MERCURY
7.1J	MG/KG	NICKEL
2300J	MG/KG	POTASSIUM
1.0U	MG/KG	SELENIUM
0.80	MG/KG	SILVER
7000	MG/KG	SODIUM
1.4U	MG/KG	THALLIUM
42	MG/KG	VANADIUM
65	MG/KG	ZINC
0.16UJ	MG/KG	CYANIDE
47	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 5119 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: BB001TBW /

MD No: 0J35

Inorg Contractor: SENTIN

Media: BLIND BLANK WATER

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:30

Ending:

SAMPLE NOT LISTED ON TRAFFIC REPORT

RESULTS	UNITS	ANALYTE
54U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
0.90U	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
160U	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
2.3U	UG/L	COPPER
26U	UG/L	IRON
2.5U	UG/L	LEAD
45	UG/L	MAGNESIUM
0.70U	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
96	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
1200U	UG/L	SODIUM
3.6U	UG/L	THALLIUM
1.7U	UG/L	VANADIUM
4.5U	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4775 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01RB /

MD No: 0J37

Inorg Contractor: SENTIN

Media: EQUIPMENT RINSE BLANK

D No: 0J37

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 10:10

Ending:

RESULTS	UNITS	ANALYTE
49U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
0.90U	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
200UJ	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
7.4	UG/L	COPPER
26U	UG/L	IRON
2.5UJ	UG/L	LEAD
200U	UG/L	MAGNESIUM
0.70UJ	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
180U	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
2580B	UG/L	SODIUM
3.6U	UG/L	THALLIUM
1.7U	UG/L	VANADIUM
13	UG/L	ZINC
10U	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4787 FY 2001 Project: 01-0528

## METALS SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02RB /

MD No: 0J49

Inorg Contractor: SENTIN

Media: EQUIPMENT RINSE BLANK

D No: 0J49

Org Contractor: CEIMIC

Produced by: Goddard, Denise

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:50

Ending:

RESULTS	UNITS	ANALYTE
49U	UG/L	ALUMINUM
3.3U	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
0.90U	UG/L	BARIUM
0.40U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
160UJ	UG/L	CALCIUM
1.6U	UG/L	CHROMIUM
1.8U	UG/L	COBALT
2.3U	UG/L	COPPER
26U	UG/L	IRON
2.5UJ	UG/L	LEAD
200U	UG/L	MAGNESIUM
0.70UJ	UG/L	MANGANESE
0.10U	UG/L	TOTAL MERCURY
2.0U	UG/L	NICKEL
170U	UG/L	POTASSIUM
1.7U	UG/L	SELENIUM
1.3U	UG/L	SILVER
2700	UG/L	SODIUM
4.7U	UG/L	THALLIUM
1.7U	UG/L	VANADIUM
6.4	UG/L	ZINC
10U	UG/L	CYANIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

APR 27 REC'D

MEMORANDUM

Date: 04/25/2001

Subject: Results of CLASSICALS/NUTRIENTS Sample Analysis  
01-0529 Latex Construction Co  
Thunderbolt, GA

From: Carroll, Anthony

*Anthony Carroll*

To: King, CharlesL

CC: Heather Kennedy  
START/TT

Thru: Scifres, Jenny *Scifres*  
Chief, Inorganic Chemistry Section  
Analytical Support Branch

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

Sample 4365 FY 2001 Project: 01-0529

Produced by: Carroll, Anthony

## SPECIFIED TESTS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC01MW /

Media: GROUNDWATER

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:40

Ending:

RESULTS	UNITS	ANALYTE
20U	UG/L	CYANIDE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4364 FY 2001 Project: 01-0529

SPECIFIED TESTS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC02MW /

Media: GROUNDWATER

Produced by: Carroll, Anthony

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

RESULTS	UNITS	ANALYTE
20U	UG/L	CYANIDE



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

MAY 7 RECD

### MEMORANDUM

Date: 05/02/2001

Subject: Results of METALS Sample Analysis  
01-0527 Jordan Sign Company Inc  
Savannah, GA

From: VanCuron, Francine *RV*

To: Williams, Amy

CC: Heather Kennedy  
START/TT

Thru: Scifres, Jenny *[Signature]*  
Chief, Inorganic Chemistry Section  
Analytical Support Branch

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

## METALS SAMPLE ANALYSIS

EPA - REGION IV SEDS, ATHENS, GA

Production Date: 05/02/2001 16:00

Sample 4360 FY 2001 Project: 01-0527

## METALS SCAN

Facility: Jordan Sign Company Inc

Savannah, GA

Program: SF

Id/Station: JS08DW /

Media: POTABLE WATER

Produced by: VanCuron, Francine

Requestor:

Project Leader: AWILLIAM

Beginning: 03/28/2001 10:25

Ending:

RESULTS	UNITS	ANALYTE
10U	UG/L	SILVER
2.4A	UG/L	ARSENIC
NA	UG/L	BORON
14A	UG/L	BARIUM
1.5U	UG/L	BERYLLIUM
0.50U	UG/L	CADMIUM
2.5U	UG/L	COBALT
2.5U	UG/L	CHROMIUM
10U	UG/L	COPPER
5.0U	UG/L	MOLYBDENUM
5.0U	UG/L	NICKEL
1.0U	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
10U	UG/L	TIN
340A	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
5.0U	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
5.0U	UG/L	VANADIUM
1.5U	UG/L	YTTRIUM
7.4A	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
50U	UG/L	ALUMINUM
5.0U	UG/L	MANGANESE
29A	MG/L	CALCIUM
8.7A	MG/L	MAGNESIUM
0.050U	MG/L	IRON
12A	MG/L	SODIUM
2.1A	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4782 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02GW /

MD No: 0J44

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J44

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE
21NJ	UG/L	DIETHYLTOLUAMIDE
4J	UG/L	UNKNOWN

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

: indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4782 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: ~SF

Case No: 29099

Id/Station: LC02GW /

MD No: 0J44

Media: GROUNDWATER

D No: 0J44

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10U	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
110	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROBENZENE (HCB)
10U	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

Average value, NA-not analyzed, NAI-interferences, J-estimated value, N-presumptive evidence of presence of material.

Actual value is known to be less than value given, L-actual value is known to be greater than value given, U-material was analyzed for but not detected, the number is the minimum quantitation limit.

; indicates that data unusable, compound may or may not be present, resampling and reanalysis is necessary for verification.

Sample 4820 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/04/2001 11:25

Id/Station: LC01GW /

MD No: 0J82

Inorg Contractor: SENTIN

Ending:

Media: GROUNDWATER

D No: 0J82

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
13J	UG/L	UNKNOWN

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4820 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01GW /

MD No: 0J82

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J82

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/04/2001 11:25

Ending:

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CARROLACIDAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10UJ	UG/L	HEXACHLOROBENZENE (HCB)
10UJ	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10UJ	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GHI)PERYLENE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4779 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 03/30/2001 12:00

Id/Station: LC09SB /

MD No: 0J41

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J41

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
2500J	UG/KG	7 UNKNOWNNS
340JN	UG/KG	UNKNOWN AMIDE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4779 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SB /

MD No: 0J41

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J41

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 12:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
470UJ	UG/KG	BENZALDEHYDE
470U	UG/KG	PHENOL
470UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
470U	UG/KG	2-CHLOROPHENOL
470U	UG/KG	2-METHYLPHENOL
470UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
470U	UG/KG	ACETOPHENONE
470U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
470U	UG/KG	N-NITROSODI-N-PROPYLAMINE
470U	UG/KG	HEXACHLOROETHANE
470U	UG/KG	NITROBENZENE
470U	UG/KG	ISOPHORONE
470U	UG/KG	2-NITROPHENOL
470U	UG/KG	2,4-DIMETHYLPHENOL
470U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
470U	UG/KG	2,4-DICHLOROPHENOL
470U	UG/KG	NAPHTHALENE
470U	UG/KG	4-CHLOROANILINE
470U	UG/KG	HEXACHLOROBUTADIENE
470U	UG/KG	CAPROLACTAM
470U	UG/KG	4-CHLORO-3-METHYLPHENOL
470U	UG/KG	2-METHYLNAPHTHALENE
470U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
470U	UG/KG	2,4,6-TRICHLOROPHENOL
1200U	UG/KG	2,4,5-TRICHLOROPHENOL
470U	UG/KG	1,1-BIPHENYL
470U	UG/KG	2-CHLORONAPHTHALENE
1200UJ	UG/KG	2-NITROANILINE
470U	UG/KG	DIMETHYL PHTHALATE
470U	UG/KG	2,6-DINITROTOLUENE
470U	UG/KG	ACENAPHTHYLENE
1200U	UG/KG	3-NITROANILINE
470U	UG/KG	ACENAPHTHENE
1200U	UG/KG	2,4-DINITROPHENOL
1200U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
470U	UG/KG	DIBENZOFURAN
470U	UG/KG	2,4-DINITROTOLUENE
470U	UG/KG	DIETHYL PHTHALATE
470U	UG/KG	FLUORENE
470U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1200U	UG/KG	4-NITROANILINE
1200U	UG/KG	2-METHYL-4,6-DINITROPHENOL
470U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
470U	UG/KG	4-BROMOPHENYL PHENYL ETHER
470U	UG/KG	HEXACHLOROBENZENE (HCB)
470U	UG/KG	ATRAZINE
1200U	UG/KG	PENTACHLOROPHENOL
470U	UG/KG	PHENANTHRENE
470U	UG/KG	ANTHRACENE
470U	UG/KG	CARBAZOLE
470U	UG/KG	DI-N-BUTYLPHTHALATE
470U	UG/KG	FLUORANTHENE
470U	UG/KG	PYRENE
470UJ	UG/KG	BENZYL BUTYL PHTHALATE
470U	UG/KG	3,3'-DICHLOROBENZIDINE
470U	UG/KG	BENZO(A)ANTHRACENE
470U	UG/KG	CHRYSENE
470U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
470U	UG/KG	DI-N-OCTYLPHTHALATE
470U	UG/KG	BENZO(B)FLUORANTHENE
470U	UG/KG	BENZO(K)FLUORANTHENE
470U	UG/KG	BENZO-A-PYRENE
470U	UG/KG	INDENO (1,2,3-CD) PYRENE
470U	UG/KG	DIBENZO(A,H)ANTHRACENE
470U	UG/KG	BENZO(GH)PERYLENE
31	%	% MOISTURE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4804 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 10:20

Id/Station: LC08SB /

MD No: 0J66

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J66

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
3700J	UG/KG	UNKNOWN

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4804 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA  
 Program: SF Case No: 29099  
 Id/Station: LC08SB / MD No: 0J66  
 Media: SUBSURFACE SOIL (> 12") D No: 0J66

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3600UJ	UG/KG	BENZALDEHYDE
3600U	UG/KG	PHENOL
3600U	UG/KG	BIS(2-CHLOROETHYL) ETHER
3600U	UG/KG	2-CHLOROPHENOL
3600U	UG/KG	2-METHYLPHENOL
3600UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
3600U	UG/KG	ACETOPHENONE
3600U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
3600U	UG/KG	N-NITROSODI-N-PROPYLAMINE
3600U	UG/KG	HEXACHLOROETHANE
3600U	UG/KG	NITROBENZENE
3600U	UG/KG	ISOPHORONE
3600U	UG/KG	2-NITROPHENOL
3600U	UG/KG	2,4-DIMETHYLPHENOL
3600U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
3600U	UG/KG	2,4-DICHLOROPHENOL
3600U	UG/KG	NAPHTHALENE
3600U	UG/KG	4-CHLOROANILINE
3600U	UG/KG	HEXACHLOROBUTADIENE
3600U	UG/KG	CAPROLACTAM
3600U	UG/KG	4-CHLORO-3-METHYLPHENOL
3600U	UG/KG	2-METHYLNAPHTHALENE
3600U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
3600U	UG/KG	2,4,6-TRICHLOROPHENOL
9000U	UG/KG	2,4,5-TRICHLOROPHENOL
3600U	UG/KG	1,1-BIPHENYL
3600U	UG/KG	2-CHLORONAPHTHALENE
9000U	UG/KG	2-NITROANILINE
3600U	UG/KG	DIMETHYL PHTHALATE
3600U	UG/KG	2,6-DINITROTOLUENE
3600U	UG/KG	ACENAPHTHYLENE
9000U	UG/KG	3-NITROANILINE
3600U	UG/KG	ACENAPHTHENE
9000U	UG/KG	2,4-DINITROPHENOL
9000U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
3600U	UG/KG	DIBENZOFURAN
3600U	UG/KG	2,4-DINITROTOLUENE
3600U	UG/KG	DIETHYL PHTHALATE
3600U	UG/KG	FLUORENE
3600U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
9000U	UG/KG	4-NITROANILINE
9000U	UG/KG	2-METHYL-4,6-DINITROPHENOL
3600U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
3600UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
3600UJ	UG/KG	HEXACHLOROBENZENE (HCB)
3600U	UG/KG	ATRAZINE
9000UJ	UG/KG	PENTACHLOROPHENOL
3600U	UG/KG	PHENANTHRENE
3600U	UG/KG	ANTHRACENE
3600U	UG/KG	CARBAZOLE
3600U	UG/KG	DI-N-BUTYLPHTHALATE
500J	UG/KG	FLUORANTHENE
480J	UG/KG	PYRENE
3600U	UG/KG	BENZYL BUTYL PHTHALATE
3600U	UG/KG	3,3'-DICHLOROBENZIDINE
3600U	UG/KG	BENZO(A)ANTHRACENE
3600U	UG/KG	CHRYSENE
3600U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
3600U	UG/KG	DI-N-OCTYLPHTHALATE
3600U	UG/KG	BENZO(B)FLUORANTHENE
3600U	UG/KG	BENZO(K)FLUORANTHENE
3600U	UG/KG	BENZO-A-PYRENE
3600U	UG/KG	INDENO (1,2,3-CD) PYRENE
3600U	UG/KG	DIBENZO(A,H)ANTHRACENE
3600U	UG/KG	BENZO(GH)PERYLENE
10	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4796 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC07SB / MD No: 0J58

Media: SUBSURFACE SOIL (> 12") D No: 0J58

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:05

Ending:

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
	UG/KG	5 UNKNOWN
72NJ	UG/KG	STANNANE, CHLOROTRIS (2-METHY

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
ic indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4796 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Programs: SF

Case No: 29099

Id/Station: LC07SB /

MD No: 0J58

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J58

Inorg Contractor: SENTIN

Org Contractor: CEIMC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
350UJ	UG/KG	BENZALDEHYDE
350U	UG/KG	PHENOL
350U	UG/KG	BIS(2-CHLOROETHYL) ETHER
350U	UG/KG	2-CHLOROPHENOL
350U	UG/KG	2-METHYLPHENOL
350UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
350U	UG/KG	ACETOPHENONE
350U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
350U	UG/KG	N-NITROSODI-N-PROPYLAMINE
350U	UG/KG	HEXACHLOROETHANE
350U	UG/KG	NITROBENZENE
350U	UG/KG	ISOPHORONE
350U	UG/KG	2-NITROPHENOL
350U	UG/KG	2,4-DIMETHYLPHENOL
350U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
350U	UG/KG	2,4-DICHLOROPHENOL
350U	UG/KG	NAPHTHALENE
350U	UG/KG	4-CHLOROANILINE
350U	UG/KG	HEXACHLOROBUTADIENE
350U	UG/KG	CAPROLACTAM
350U	UG/KG	4-CHLORO-3-METHYLPHENOL
350U	UG/KG	2-METHYLNAPHTHALENE
350U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
350U	UG/KG	2,4,6-TRICHLOROPHENOL
880U	UG/KG	2,4,5-TRICHLOROPHENOL
350U	UG/KG	1,1-BIPHENYL
350U	UG/KG	2-CHLORONAPHTHALENE
880UJ	UG/KG	2-NITROANILINE
350U	UG/KG	DIMETHYL PHTHALATE
350U	UG/KG	2,6-DINITROTOLUENE
350U	UG/KG	ACENAPHTHYLENE
880U	UG/KG	3-NITROANILINE
350U	UG/KG	ACENAPHTHENE
880U	UG/KG	2,4-DINITROPHENOL
880U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
350U	UG/KG	DIBENZOFURAN
350U	UG/KG	2,4-DINITROTOLUENE
350U	UG/KG	DIETHYL PHTHALATE
350U	UG/KG	FLUORENE
350U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
880U	UG/KG	4-NITROANILINE
880U	UG/KG	2-METHYL-4,6-DINITROPHENOL
350U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
350U	UG/KG	4-BROMOPHENYL PHENYL ETHER
350U	UG/KG	HEXACHLOROBENZENE (HCB)
350U	UG/KG	ATRAZINE
880U	UG/KG	PENTACHLOROPHENOL
350U	UG/KG	PHENANTHRENE
350U	UG/KG	ANTHRACENE
350U	UG/KG	CARBAZOLE
350U	UG/KG	DI-N-BUTYLPHTHALATE
350U	UG/KG	FLUORANTHENE
350U	UG/KG	PYRENE
350U	UG/KG	BENZYL BUTYL PHTHALATE
350U	UG/KG	3,3'-DICHLOROBENZIDINE
350U	UG/KG	BENZO(A)ANTHRACENE
350U	UG/KG	CHRYSENE
350U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
350U	UG/KG	DI-N-OCTYLPHTHALATE
350U	UG/KG	BENZO(B)FLUORANTHENE
350UJ	UG/KG	BENZO(K)FLUORANTHENE
350U	UG/KG	BENZO-A-PYRENE
350U	UG/KG	INDENO (1,2,3-CD) PYRENE
350U	UG/KG	DIBENZO(A,H)ANTHRACENE
350U	UG/KG	BENZO(GH)PERYLENE
8	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4791 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 12:25

Id/Station: LC06SB /

MD No: 0J53

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J53

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
4200J	UG/KG	2 UNKNOWNNS
530J	UG/KG	UNKNOWN PHTHALATE
1300JN	UG/KG	UNKNOWN AMIDE
420NJ	UG/KG	PHOSPHORIC ACID, TRIS (3-METH
980NJ	UG/KG	PHOSPHORIC ACID, TRIS (METHYL
770NJ	UG/KG	PHOSPHORIC ACID, TRIS (4-METH
2600NJ	UG/KG	BENZO [E] PYRENE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4791 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 12:25

Id/Station: LC06SB /

MD No: 0J53

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J53

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1800UJ	UG/KG	BENZALDEHYDE
1800U	UG/KG	PHENOL
1800UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
1800U	UG/KG	2-CHLOROPHENOL
1800U	UG/KG	2-METHYLPHENOL
1800UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
1800U	UG/KG	ACETOPHENONE
1800U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
1800U	UG/KG	N-NITROSODI-N-PROPYLAMINE
1800U	UG/KG	HEXACHLOROETHANE
1800U	UG/KG	NITROBENZENE
1800U	UG/KG	ISOPHORONE
1800U	UG/KG	2-NITROPHENOL
1800U	UG/KG	2,4-DIMETHYLPHENOL
1800U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
1800U	UG/KG	2,4-DICHLOROPHENOL
1800U	UG/KG	NAPHTHALENE
1800U	UG/KG	4-CHLOROANILINE
1800U	UG/KG	HEXACHLOROBUTADIENE
1800U	UG/KG	CAPROLACTAM
1800U	UG/KG	4-CHLORO-3-METHYLPHENOL
1800U	UG/KG	2-METHYLNAPHTHALENE
1800U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
1800U	UG/KG	2,4,6-TRICHLOROPHENOL
4500U	UG/KG	2,4,5-TRICHLOROPHENOL
1800U	UG/KG	1,1-BIPHENYL
1800U	UG/KG	2-CHLORONAPHTHALENE
4500UJ	UG/KG	2-NITROANILINE
1800U	UG/KG	DIMETHYL PHTHALATE
1800U	UG/KG	2,6-DINITROTOLUENE
1800U	UG/KG	ACENAPHTHYLENE
4500U	UG/KG	3-NITROANILINE
1800U	UG/KG	ACENAPHTHENE
4500U	UG/KG	2,4-DINITROPHENOL
4500U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
1800U	UG/KG	DIBENZOFURAN
1800U	UG/KG	2,4-DINITROTOLUENE
1800U	UG/KG	DIETHYL PHTHALATE
1800U	UG/KG	FLUORENE
1800U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
4500U	UG/KG	4-NITROANILINE
4500U	UG/KG	2-METHYL-4,6-DINITROPHENOL
1800U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
1800U	UG/KG	4-BROMOPHENYL PHENYL ETHER
1800U	UG/KG	HEXACHLOROBENZENE (HCB)
1800U	UG/KG	ATRAZINE
4600U	UG/KG	PENTACHLOROPHENOL
1100J	UG/KG	PHENANTHRENE
1800U	UG/KG	ANTHRACENE
1800U	UG/KG	CARBAZOLE
1800U	UG/KG	DI-N-BUTYLPHTHALATE
1700J	UG/KG	FLUORANTHENE
1500J	UG/KG	PYRENE
1800UJ	UG/KG	BENZYL BUTYL PHTHALATE
1800U	UG/KG	3,3'-DICHLOROBENZIDINE
860J	UG/KG	BENZO(A)ANTHRACENE
1100J	UG/KG	CHRYSENE
1800U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
1800U	UG/KG	DI-N-OCTYLPHTHALATE
850J	UG/KG	BENZO(B)FLUORANTHENE
920J	UG/KG	BENZO(K)FLUORANTHENE
1800U	UG/KG	BENZO-A-PYRENE
570J	UG/KG	INDENO (1,2,3-CD) PYRENE
1800U	UG/KG	DIBENZO(A,H)ANTHRACENE
560J	UG/KG	BENZO(GH)PERYLENE
9	%	% MOISTURE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

ic indicates that data unusable. compound may or may not be present; resampling and reanalysis is necessary for verification.

Sample 4789 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC05SB / MD No: 0J51

Media: SUBSURFACE SOIL (> 12") D No: 0J51

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
1500J	UG/KG	UNKNOWN
140NJ	UG/KG	2-PROPANOL, 1- (2-METHOXYPROP

TA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
 ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
 c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4789 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC05SB / MD No: 0J51

Media: SUBSURFACE SOIL (&gt; 12") D No: 0J51

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
360UJ	UG/KG	BENZALDEHYDE
360U	UG/KG	PHENOL
360UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
360U	UG/KG	2-CHLOROPHENOL
360U	UG/KG	2-METHYLPHENOL
360UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
360U	UG/KG	ACETOPHENONE
360U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
360U	UG/KG	N-NITROSODI-N-PROPYLAMINE
360U	UG/KG	HEXACHLOROETHANE
360U	UG/KG	NITROBENZENE
360U	UG/KG	ISOPHORONE
360U	UG/KG	2-NITROPHENOL
360U	UG/KG	2,4-DIMETHYLPHENOL
360U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
360U	UG/KG	2,4-DICHLOROPHENOL
360U	UG/KG	NAPHTHALENE
360U	UG/KG	4-CHLOROANILINE
360U	UG/KG	HEXACHLOROBUTADIENE
360U	UG/KG	CAPROLACTAM
360U	UG/KG	4-CHLORO-3-METHYLPHENOL
360U	UG/KG	2-METHYLNAPHTHALENE
360U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
360U	UG/KG	2,4,6-TRICHLOROPHENOL
900U	UG/KG	2,4,5-TRICHLOROPHENOL
360U	UG/KG	1,1-BIPHENYL
360U	UG/KG	2-CHLORONAPHTHALENE
900UJ	UG/KG	2-NITROANILINE
360U	UG/KG	DIMETHYL PHTHALATE
360U	UG/KG	2,6-DINITROTOLUENE
360U	UG/KG	ACENAPHTHYLENE
900U	UG/KG	3-NITROANILINE
360U	UG/KG	ACENAPHTHENE
900U	UG/KG	2,4-DINITROPHENOL
900U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
360U	UG/KG	DIBENZOFURAN
360U	UG/KG	2,4-DINITROTOLUENE
360U	UG/KG	DIETHYL PHTHALATE
360U	UG/KG	FLUORENE
360U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
900U	UG/KG	4-NITROANILINE
900U	UG/KG	2-METHYL-4,6-DINITROPHENOL
360U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
360U	UG/KG	4-BROMOPHENYL PHENYL ETHER
360U	UG/KG	HEXACHLOROBENZENE (HCB)
360U	UG/KG	ATRAZINE
900U	UG/KG	PENTACHLOROPHENOL
360U	UG/KG	PHENANTHRENE
360U	UG/KG	ANTHRACENE
360U	UG/KG	CARBAZOLE
360U	UG/KG	DI-N-BUTYLPHTHALATE
360U	UG/KG	FLUORANTHENE
360U	UG/KG	PYRENE
360UJ	UG/KG	BENZYL BUTYL PHTHALATE
360U	UG/KG	3,3'-DICHLOROBENZIDINE
360U	UG/KG	BENZO(A)ANTHRACENE
360U	UG/KG	CHRYSENE
360U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
360U	UG/KG	DI-N-OCTYLPHTHALATE
360U	UG/KG	BENZO(B)FLUORANTHENE
360U	UG/KG	BENZO(K)FLUORANTHENE
360U	UG/KG	BENZO-A-PYRENE
360U	UG/KG	INDENO (1,2,3-CD) PYRENE
360U	UG/KG	DIBENZO(A,H)ANTHRACENE
360U	UG/KG	BENZO(GH)PERYLENE
9	%	% MOISTURE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4802 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC04SB / MD No: 0J64

Media: SUBSURFACE SOIL (&gt; 12") D No: 0J64

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:40

Ending:

RESULTS	UNITS	ANALYTE
21000J	UG/KG	5 UNKNOWNNS
900J	UG/KG	UNKNOWN AMIDE
2300JN	UG/KG	PHOSPHORIC ACID, TRIS (METHYL - (2 ISOMERS)
1800NJ	UG/KG	PHOSPHORIC ACID, TRIS (3-METH

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4802 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SB /

MD No: 0J64

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J64

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:40

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1700UJ	UG/KG	BENZALDEHYDE
1700U	UG/KG	PHENOL
1700U	UG/KG	BIS(2-CHLOROETHYL) ETHER
1700U	UG/KG	2-CHLOROPHENOL
1700U	UG/KG	2-METHYLPHENOL
1700UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
1700U	UG/KG	ACETOPHENONE
1700U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
1700U	UG/KG	N-NITROSODI-N-PROPYLAMINE
1700U	UG/KG	HEXACHLOROETHANE
1700U	UG/KG	NITROBENZENE
1700U	UG/KG	ISOPHORONE
1700U	UG/KG	2-NITROPHENOL
1700U	UG/KG	2,4-DIMETHYLPHENOL
1700U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
1700U	UG/KG	2,4-DICHLOROPHENOL
1700U	UG/KG	NAPHTHALENE
1700U	UG/KG	4-CHLOROANILINE
1700U	UG/KG	HEXACHLOROBUTADIENE
1700U	UG/KG	CAPROLACTAM
1700U	UG/KG	4-CHLORO-3-METHYLPHENOL
1700U	UG/KG	2-METHYLNAPHTHALENE
1700U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
1700U	UG/KG	2,4,6-TRICHLOROPHENOL
4300U	UG/KG	2,4,5-TRICHLOROPHENOL
1700U	UG/KG	1,1-BIPHENYL
1700U	UG/KG	2-CHLORONAPHTHALENE
4300U	UG/KG	2-NITROANILINE
1700U	UG/KG	DIMETHYL PHTHALATE
1700U	UG/KG	2,6-DINITROTOLUENE
1700U	UG/KG	ACENAPHTHYLENE
4300U	UG/KG	3-NITROANILINE
1700U	UG/KG	ACENAPHTHENE
4300U	UG/KG	2,4-DINITROPHENOL
4300U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
1700U	UG/KG	DIBENZOFURAN
1700U	UG/KG	2,4-DINITROTOLUENE
1700U	UG/KG	DIETHYL PHTHALATE
1700U	UG/KG	FLUORENE
1700U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
4300U	UG/KG	4-NITROANILINE
4300U	UG/KG	2-METHYL-4,6-DINITROPHENOL
1700U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
1700UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
1700UJ	UG/KG	HEXACHLOROBENZENE (HCB)
1700U	UG/KG	ATRAZINE
4300UJ	UG/KG	PENTACHLOROPHENOL
290J	UG/KG	PHENANTHRENE
1700U	UG/KG	ANTHRACENE
1700U	UG/KG	CARBAZOLE
1700U	UG/KG	DI-N-BUTYLPHTHALATE
580J	UG/KG	FLUORANTHENE
510J	UG/KG	PYRENE
1700U	UG/KG	BENZYL BUTYL PHTHALATE
1700U	UG/KG	3,3'-DICHLOROBENZIDINE
290J	UG/KG	BENZO(A)ANTHRACENE
380J	UG/KG	CHRYSENE
1700U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
1700U	UG/KG	DI-N-OCTYLPHTHALATE
330J	UG/KG	BENZO(B)FLUORANTHENE
310J	UG/KG	BENZO(K)FLUORANTHENE
1700U	UG/KG	BENZO-A-PYRENE
270J	UG/KG	INDENO (1,2,3-CD) PYRENE
1700U	UG/KG	DIBENZO(A,H)ANTHRACENE
270J	UG/KG	BENZO(GHI)PERYLENE
5	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4781 FY 2001 Project: 01-0528

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 03/30/2001 16:20  
Ending:

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC03SB / MD No: 0J43  
Media: SUBSURFACE SOIL (> 12") D No: 0J43

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
2400J	UG/KG	4 UNKNOWN
200NJ	UG/KG	2-PROPANOL, 1- (2-METHOXYPROP
380JN	UG/KG	UNKNOWN AMIDE

TA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
jc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4781 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SB /

MD No: 0J43

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J43

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
410UJ	UG/KG	BENZALDEHYDE
410U	UG/KG	PHENOL
410UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
410U	UG/KG	2-CHLOROPHENOL
410U	UG/KG	2-METHYLPHENOL
410UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
410U	UG/KG	ACETOPHENONE
410U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
410U	UG/KG	N-NITROSODI-N-PROPYLAMINE
410U	UG/KG	HEXACHLOROETHANE
410U	UG/KG	NITROBENZENE
410U	UG/KG	ISOPHORONE
410U	UG/KG	2-NITROPHENOL
410U	UG/KG	2,4-DIMETHYLPHENOL
410U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
410U	UG/KG	2,4-DICHLOROPHENOL
410U	UG/KG	NAPHTHALENE
410U	UG/KG	4-CHLOROANILINE
410U	UG/KG	HEXACHLOROBUTADIENE
410U	UG/KG	CAPROLACTAM
410U	UG/KG	4-CHLORO-3-METHYLPHENOL
410U	UG/KG	2-METHYLNAPHTHALENE
410U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
410U	UG/KG	2,4,6-TRICHLOROPHENOL
1000U	UG/KG	2,4,5-TRICHLOROPHENOL
410U	UG/KG	1,1-BIPHENYL
410U	UG/KG	2-CHLORONAPHTHALENE
1000UJ	UG/KG	2-NITROANILINE
410U	UG/KG	DIMETHYL PHTHALATE
410U	UG/KG	2,6-DINITROTOLUENE
410U	UG/KG	ACENAPHTHYLENE
1000U	UG/KG	3-NITROANILINE
410U	UG/KG	ACENAPHTHENE
1000U	UG/KG	2,4-DINITROPHENOL
1000U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
410U	UG/KG	DIBENZOFURAN
410U	UG/KG	2,4-DINITROTOLUENE
410U	UG/KG	DIETHYL PHTHALATE
410U	UG/KG	FLUORENE
410U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1000U	UG/KG	4-NITROANILINE
1000U	UG/KG	2-METHYL-4,6-DINITROPHENOL
410U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
410U	UG/KG	4-BROMOPHENYL PHENYL ETHER
410U	UG/KG	HEXACHLOROBENZENE (HCB)
410U	UG/KG	ATRAZINE
1000U	UG/KG	PENTACHLOROPHENOL
410U	UG/KG	PHENANTHRENE
410U	UG/KG	ANTHRACENE
410U	UG/KG	CARBAZOLE
410U	UG/KG	DI-N-BUTYLPHTHALATE
410U	UG/KG	FLUORANTHENE
410U	UG/KG	PYRENE
410UJ	UG/KG	BENZYL BUTYL PHTHALATE
410U	UG/KG	3,3'-DICHLORO BENZIDINE
410U	UG/KG	BENZO(A)ANTHRACENE
410U	UG/KG	CHRYSENE
410U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
410U	UG/KG	DI-N-OCTYLPHTHALATE
410U	UG/KG	BENZO(B)FLUORANTHENE
410U	UG/KG	BENZO(K)FLUORANTHENE
410U	UG/KG	BENZO-A-PYRENE
410U	UG/KG	INDENO (1,2,3-CD) PYRENE
410U	UG/KG	DIBENZO(A,H)ANTHRACENE
410U	UG/KG	BENZO(GH)PERYLENE
21	%	% MOISTURE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4777 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 03/30/2001 12:05

Id/Station: LC02SB /

MD No: 0J39

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J39

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
3100J	UG/KG	10 UNKNOWN
96NJ	UG/KG	ACENAPHTHO (1,2-B) PYRIDINE
84NJ	UG/KG	11H-BENZO [A] FLUORENE
89JN	UG/KG	UNKNOWN AMIDE
83JN	UG/KG	UNKNOWN PAH
83NJ	UG/KG	7H-BENZ [DE] ANTHRACEN-7-ONE
1000NJ	UG/KG	PERYLENE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4777 FY: 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SB /

MD No: 0J39

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J39

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 12:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
400UJ	UG/KG	BENZALDEHYDE
400U	UG/KG	PHENOL
400UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
400U	UG/KG	2-CHLOROPHENOL
400U	UG/KG	2-METHYLPHENOL
400UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
400U	UG/KG	ACETOPHENONE
400U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
400U	UG/KG	N-NITROSODI-N-PROPYLAMINE
400U	UG/KG	HEXACHLOROETHANE
400U	UG/KG	NITROBENZENE
400U	UG/KG	ISOPHORONE
400U	UG/KG	2-NITROPHENOL
400U	UG/KG	2,4-DIMETHYLPHENOL
400U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
400U	UG/KG	2,4-DICHLOROPHENOL
400U	UG/KG	NAPHTHALENE
400U	UG/KG	4-CHLOROANILINE
400U	UG/KG	HEXACHLOROBUTADIENE
400U	UG/KG	CAPROLACTAM
400U	UG/KG	4-CHLORO-3-METHYLPHENOL
400U	UG/KG	2-METHYLNAPHTHALENE
400U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
400U	UG/KG	2,4,6-TRICHLOROPHENOL
1000U	UG/KG	2,4,5-TRICHLOROPHENOL
400U	UG/KG	1,1-BIPHENYL
400U	UG/KG	2-CHLORONAPHTHALENE
1000UJ	UG/KG	2-NITROANILINE
400U	UG/KG	DIMETHYL PHTHALATE
400U	UG/KG	2,6-DINITROTOLUENE
400U	UG/KG	ACENAPHTHYLENE
1000U	UG/KG	3-NITROANILINE
400U	UG/KG	ACENAPHTHENE
1000U	UG/KG	2,4-DINITROPHENOL
1000U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
400U	UG/KG	DIBENZOFURAN
400U	UG/KG	2,4-DINITROTOLUENE
400U	UG/KG	DIETHYL PHTHALATE
400U	UG/KG	FLUORENE
400U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1000U	UG/KG	4-NITROANILINE
1000U	UG/KG	2-METHYL-4,6-DINITROPHENOL
400U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
400U	UG/KG	4-BROMOPHENYL PHENYL ETHER
400U	UG/KG	HEXACHLOROBENZENE (HCB)
400U	UG/KG	ATRAZINE
1000U	UG/KG	PENTACHLOROPHENOL
140J	UG/KG	PHENANTHRENE
54J	UG/KG	ANTHRACENE
400U	UG/KG	CARBAZOLE
400U	UG/KG	DI-N-BUTYLPHTHALATE
330J	UG/KG	FLUORANTHENE
690	UG/KG	PYRENE
400UJ	UG/KG	BENZYL BUTYL PHTHALATE
400U	UG/KG	3,3'-DICHLOROBENZIDINE
440	UG/KG	BENZO(A)ANTHRACENE
1800	UG/KG	CHRYSENE
400U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
400U	UG/KG	DI-N-OCTYLPHTHALATE
1000	UG/KG	BENZO(B)FLUORANTHENE
1000	UG/KG	BENZO(K)FLUORANTHENE
710	UG/KG	BENZO-A-PYRENE
380J	UG/KG	INDENO (1,2,3-CD) PYRENE
140J	UG/KG	DIBENZO(A,H)ANTHRACENE
360J	UG/KG	BENZO(GH)PERYLENE
19	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4806 - FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC01SB / MD No: 0J68  
Media: SUBSURFACE SOIL (> 12") D No: 0J68

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/03/2001 11:30  
Ending:

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
17000J	UG/KG	17 UNKNOWNNS
100NJ	UG/KG	TRICYCLO [5.4.0.02,8] UNDEC-9-
100NJ	UG/KG	1H-3A, 7-METHANOAZULENE, 2,3-
460NJ	UG/KG	1,4-METHANO-1H-INDENE, OCTAH
2000NJ	UG/KG	1,4-METHANOAZULENE, DECAHYDR
1200NJ	UG/KG	THUJOPSENE
1000NJ	UG/KG	BENZENE, 1-METHYL-4- (1,2,3-T
1500NJ	UG/KG	CEDROL
460NJ	UG/KG	PHENOL, 2-METHYL-5- (1,2,2-TR
900NJ	UG/KG	HEXADECANOIC ACID
340NJ	UG/KG	PHENANTHRENE, 1,2,3,4,4A,9,1
580NJ	UG/KG	9,12-OCTADECADIENOIC ACID (Z
6900JN	UG/KG	2-PHENANTHRENOL, 4B,5,6,7,8, (2 ISOMERS)

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4806 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01SB /

MD No: 0J68

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J68

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 11:30

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
360UJ	UG/KG	BENZALDEHYDE
360U	UG/KG	PHENOL
360U	UG/KG	BIS(2-CHLOROETHYL) ETHER
360U	UG/KG	2-CHLOROPHENOL
360U	UG/KG	2-METHYLPHENOL
360UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
360U	UG/KG	ACETOPHENONE
360U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
360U	UG/KG	N-NITROSODI-N-PROPYLAMINE
360U	UG/KG	HEXACHLOROETHANE
360U	UG/KG	NITROBENZENE
360U	UG/KG	ISOPHORONE
360U	UG/KG	2-NITROPHENOL
360U	UG/KG	2,4-DIMETHYLPHENOL
360U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
360U	UG/KG	2,4-DICHLOROPHENOL
360U	UG/KG	NAPHTHALENE
360U	UG/KG	4-CHLOROANILINE
360U	UG/KG	HEXACHLOROBUTADIENE
360U	UG/KG	CAPROLACTAM
360U	UG/KG	4-CHLORO-3-METHYLPHENOL
360U	UG/KG	2-METHYLNAPHTHALENE
360U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
360U	UG/KG	2,4,6-TRICHLOROPHENOL
890U	UG/KG	2,4,5-TRICHLOROPHENOL
360U	UG/KG	1,1-BIPHENYL
360U	UG/KG	2-CHLORONAPHTHALENE
890U	UG/KG	2-NITROANILINE
360U	UG/KG	DIMETHYL PHTHALATE
360U	UG/KG	2,6-DINITROTOLUENE
360U	UG/KG	ACENAPHTHYLENE
890U	UG/KG	3-NITROANILINE
360U	UG/KG	ACENAPHTHENE
890U	UG/KG	2,4-DINITROPHENOL
890U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
360U	UG/KG	DIBENZOFURAN
360U	UG/KG	2,4-DINITROTOLUENE
360U	UG/KG	DIETHYL PHTHALATE
360U	UG/KG	FLUORENE
360U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
890U	UG/KG	4-NITROANILINE
890U	UG/KG	2-METHYL-4,6-DINITROPHENOL
360U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
360UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
360UJ	UG/KG	HEXACHLOROBENZENE (HCB)
360U	UG/KG	ATRAZINE
890UJ	UG/KG	PENTACHLOROPHENOL
360U	UG/KG	PHENANTHRENE
360U	UG/KG	ANTHRACENE
360U	UG/KG	CARBAZOLE
360U	UG/KG	DI-N-BUTYLPHTHALATE
360U	UG/KG	FLUORANTHENE
360U	UG/KG	PYRENE
360U	UG/KG	BENZYL BUTYL PHTHALATE
360U	UG/KG	3,3'-DICHLOROBENZIDINE
360U	UG/KG	BENZO(A)ANTHRACENE
360U	UG/KG	CHRYSENE
360U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
360U	UG/KG	DI-N-OCTYLPHTHALATE
360U	UG/KG	BENZO(B)FLUORANTHENE
360U	UG/KG	BENZO(K)FLUORANTHENE
360U	UG/KG	BENZO(A)PYRENE
360U	UG/KG	INDENOM(1,2,3-CD)PYRENE
360U	UG/KG	DIBENZO(A,H)ANTHRACENE
360U	UG/KG	BENZO(G,H)PERYLENE
9	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4778 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 03/30/2001 11:40

Id/Station: LC09SS /

MD No: 0J40

Inorg Contractor: SENTIN

Ending:

Media: SURFACE SOIL (0" - 12")

D No: 0J40

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
5800J	UG/KG	5 UNKNOWN
470NJ	UG/KG	PHENOL, P-TERT-BUTYL-
970NJ	UG/KG	STANNANE, CHLOROTRIS (2-METHY
1500NJ	UG/KG	BENZENE, 1-METHYL-2- (3-METH
540NJ	UG/KG	STANNANE, BROMOTRIBUTYL-
1700JN	UG/KG	PHOSPHORIC ACID, TRIS (METHYL - (2 ISOMERS)
770NJ	UG/KG	BENZO [J] FLUORANTHENE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4778 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SS /

MD No: 0J40

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J40

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:40

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2100UJ	UG/KG	BENZALDEHYDE
2100U	UG/KG	PHENOL
2100UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
2100U	UG/KG	2-CHLOROPHENOL
220J	UG/KG	2-METHYLPHENOL
2100UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
2100U	UG/KG	ACETOPHENONE
2100U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
2100U	UG/KG	N-NITROSODI-N-PROPYLAMINE
2100U	UG/KG	HEXACHLOROETHANE
2100U	UG/KG	NITROBENZENE
2100U	UG/KG	ISOPHORONE
2100U	UG/KG	2-NITROPHENOL
2100U	UG/KG	2,4-DIMETHYLPHENOL
2100U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
2100U	UG/KG	2,4-DICHLOROPHENOL
2100U	UG/KG	NAPHTHALENE
2100U	UG/KG	4-CHLOROANILINE
2100U	UG/KG	HEXACHLOROBUTADIENE
2100U	UG/KG	CAPROLACTAM
2100U	UG/KG	4-CHLORO-3-METHYLPHENOL
2100U	UG/KG	2-METHYLNAPHTHALENE
2100U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
2100U	UG/KG	2,4,6-TRICHLOROPHENOL
5200U	UG/KG	2,4,5-TRICHLOROPHENOL
2100U	UG/KG	1,1-BIPHENYL
2100U	UG/KG	2-CHLORONAPHTHALENE
5200UJ	UG/KG	2-NITROANILINE
2100U	UG/KG	DIMETHYL PHTHALATE
2100U	UG/KG	2,6-DINITROTOLUENE
2100U	UG/KG	ACENAPHTHYLENE
5200U	UG/KG	3-NITROANILINE
2100U	UG/KG	ACENAPHTHENE
5200U	UG/KG	2,4-DINITROPHENOL
5200U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
2100U	UG/KG	DIBENZOFURAN
2100U	UG/KG	2,4-DINITROTOLUENE
2100U	UG/KG	DIETHYL PHTHALATE
2100U	UG/KG	FLUORENE
2100U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
5200U	UG/KG	4-NITROANILINE
5200U	UG/KG	2-METHYL-4,6-DINITROPHENOL
2100U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
2100U	UG/KG	4-BROMOPHENYL PHENYL ETHER
2100U	UG/KG	HEXACHLOROBENZENE (HCB)
2100U	UG/KG	ATRAZINE
5200U	UG/KG	PENTACHLOROPHENOL
1100J	UG/KG	PHENANTHRENE
2100U	UG/KG	ANTHRACENE
2100U	UG/KG	CARBAZOLE
2100U	UG/KG	DI-N-BUTYLPHTHALATE
1700J	UG/KG	FLUORANTHENE
1500J	UG/KG	PYRENE
2100UJ	UG/KG	BENZYL BUTYL PHTHALATE
2100U	UG/KG	3,3'-DICHLOROBENZIDINE
580J	UG/KG	BENZO(A)ANTHRACENE
960J	UG/KG	CHRYSENE
5300	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
2100U	UG/KG	DI-N-OCTYLPHTHALATE
950J	UG/KG	BENZO(B)FLUORANTHENE
650J	UG/KG	BENZO(K)FLUORANTHENE
640J	UG/KG	BENZO-A-PYRENE
530J	UG/KG	INDENO (1,2,3-CD) PYRENE
2100U	UG/KG	DIBENZO(A,H)ANTHRACENE
520J	UG/KG	BENZO(GH)PERYLENE
21	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4803 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 09:55

Id/Station: LC08SS /

MD No: 0J65

Inorg Contractor: SENTIN

Ending:

Media: SURFACE SOIL (0" - 12")

D No: 0J65

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
52000J	UG/KG	13 UNKNOWN
1500NJ	UG/KG	BENZYL ALCOHOL
820NJ	UG/KG	TRIETHYL PHOSPHATE
3500NJ	UG/KG	BENZOIC ACID
1600NJ	UG/KG	PHENOL, M-TERT-BUTYL-
4000NJ	UG/KG	PHTHALIC ANHYDRIDE
1100NJ	UG/KG	1 (3H) - ISOBENZOFURANONE
890NJ	UG/KG	DODECANOIC ACID
11000NJ	UG/KG	STANNANE, TRIBUTYLCHLORO-
2100NJ	UG/KG	STANNANE, BROMODIBUTYL (1-MET
2500J	UG/KG	UNKNOWN PHTHALATE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4803 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SS /

MD No: 0J65

Media: SURFACE SOIL (0" - 12")

D No: 0J65

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3600J	UG/KG	BENZALDEHYDE
400J	UG/KG	PHENOL
3700U	UG/KG	BIS(2-CHLOROETHYL) ETHER
3700U	UG/KG	2-CHLOROPHENOL
3700U	UG/KG	2-METHYLPHENOL
3700UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
1200J	UG/KG	ACETOPHENONE
3700U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
3700U	UG/KG	N-NITROSODI-N-PROPYLAMINE
3700U	UG/KG	HEXACHLOROETHANE
3700U	UG/KG	NITROBENZENE
3700U	UG/KG	ISOPHORONE
3700U	UG/KG	2-NITROPHENOL
3700U	UG/KG	2,4-DIMETHYLPHENOL
3700U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
3700U	UG/KG	2,4-DICHLOROPHENOL
3700U	UG/KG	NAPHTHALENE
3700U	UG/KG	4-CHLOROANILINE
3700U	UG/KG	HEXACHLOROBUTADIENE
3700U	UG/KG	CAPROLACTAM
3700U	UG/KG	4-CHLORO-3-METHYLPHENOL
3700U	UG/KG	2-METHYLNAPHTHALENE
3700U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
3700U	UG/KG	2,4,6-TRICHLOROPHENOL
9300U	UG/KG	2,4,5-TRICHLOROPHENOL
3700U	UG/KG	1,1-BIPHENYL
3700U	UG/KG	2-CHLORONAPHTHALENE
9300U	UG/KG	2-NITROANILINE
16000	UG/KG	DIMETHYL PHTHALATE
3700U	UG/KG	2,6-DINITROTOLUENE
3700U	UG/KG	ACENAPHTHYLENE
9300U	UG/KG	3-NITROANILINE
3700U	UG/KG	ACENAPHTHENE
9300U	UG/KG	2,4-DINITROPHENOL
9300U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
3700U	UG/KG	DIBENZOFURAN
3700U	UG/KG	2,4-DINITROTOLUENE
3700U	UG/KG	DIETHYL PHTHALATE
3700U	UG/KG	FLUORENE
3700U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
9300U	UG/KG	4-NITROANILINE
9300U	UG/KG	2-METHYL-4,6-DINITROPHENOL
3700U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
3700UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
3700UJ	UG/KG	HEXACHLOROBENZENE (HCB)
3700U	UG/KG	ATRAZINE
9300UJ	UG/KG	PENTACHLOROPHENOL
790J	UG/KG	PHENANTHRENE
3700U	UG/KG	ANTHRACENE
3700U	UG/KG	CARBAZOLE
6600	UG/KG	DI-N-BUTYLPHTHALATE
1600J	UG/KG	FLUORANTHENE
1400J	UG/KG	PYRENE
4200	UG/KG	BENZYL BUTYL PHTHALATE
3700U	UG/KG	3,3'-DICHLOROBENZIDINE
490J	UG/KG	BENZO(A)ANTHRACENE
1100J	UG/KG	CHRYSENE
22000U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
3700U	UG/KG	DI-N-OCTYLPHTHALATE
540J	UG/KG	BENZO(B)FLUORANTHENE
690J	UG/KG	BENZO(K)FLUORANTHENE
3700U	UG/KG	BENZO-A-PYRENE
390J	UG/KG	INDENO (1,2,3-CD) PYRENE
3700U	UG/KG	DIBENZO(A,H)ANTHRACENE
390J	UG/KG	BENZO(GHI)PERYLENE
11	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4795 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC07SS / MD No: 0J57  
Media: SURFACE SOIL (0" - 12") D No: 0J57

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/02/2001 16:45  
Ending:

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
5400J	UG/KG	5 UNKNOWN
720NJ	UG/KG	PHENOL, P-TERT-BUTYL-
790NJ	UG/KG	PHENOL, NONYL-
460J	UG/KG	UNKNOWN PHTHALATE
420JN	UG/KG	UNKNOWN PAH

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4795 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SS /

MD No: 0J57

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J57

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:45

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1900UJ	UG/KG	BENZALDEHYDE
1900U	UG/KG	PHENOL
1900U	UG/KG	BIS(2-CHLOROETHYL) ETHER
1900U	UG/KG	2-CHLOROPHENOL
1900U	UG/KG	2-METHYLPHENOL
1900UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
1900U	UG/KG	ACETOPHENONE
1900U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
1900U	UG/KG	N-NITROSODI-N-PROPYLAMINE
1900U	UG/KG	HEXACHLOROETHANE
1900U	UG/KG	NITROBENZENE
1900U	UG/KG	ISOPHORONE
1900U	UG/KG	2-NITROPHENOL
1900U	UG/KG	2,4-DIMETHYLPHENOL
1900U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
1900U	UG/KG	2,4-DICHLOROPHENOL
1900U	UG/KG	NAPHTHALENE
1900U	UG/KG	4-CHLOROANILINE
1900U	UG/KG	HEXACHLOROBUTADIENE
1900U	UG/KG	CAPROLACTAM
1900U	UG/KG	4-CHLORO-3-METHYLPHENOL
1900U	UG/KG	2-METHYLNAPHTHALENE
1900U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
1900U	UG/KG	2,4,6-TRICHLOROPHENOL
4900U	UG/KG	2,4,5-TRICHLOROPHENOL
1900U	UG/KG	1,1-BIPHENYL
1900U	UG/KG	2-CHLORONAPHTHALENE
4900UJ	UG/KG	2-NITROANILINE
1900U	UG/KG	DIMETHYL PHTHALATE
1900U	UG/KG	2,6-DINITROTOLUENE
1900U	UG/KG	ACENAPHTHYLENE
4900U	UG/KG	3-NITROANILINE
1900U	UG/KG	ACENAPHTHENE
4900U	UG/KG	2,4-DINITROPHENOL
4900U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
1900U	UG/KG	DIBENZOFURAN
1900U	UG/KG	2,4-DINITROTOLUENE
1900U	UG/KG	DIETHYL PHTHALATE
1900U	UG/KG	FLUORENE
1900U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
4900U	UG/KG	4-NITROANILINE
4900U	UG/KG	2-METHYL-4,6-DINITROPHENOL
1900U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
1900U	UG/KG	4-BROMOPHENYL PHENYL ETHER
1900U	UG/KG	HEXACHLOROBENZENE (HCB)
1900U	UG/KG	ATRAZINE
4900U	UG/KG	PENTACHLOROPHENOL
430J	UG/KG	PHENANTHRENE
1900U	UG/KG	ANTHRACENE
1900U	UG/KG	CARBAZOLE
1900U	UG/KG	DI-N-BUTYLPHTHALATE
850J	UG/KG	FLUORANTHENE
740J	UG/KG	PYRENE
1900U	UG/KG	BENZYL BUTYL PHTHALATE
1900U	UG/KG	3,3'-DICHLOROBENZIDINE
370J	UG/KG	BENZO(A)ANTHRACENE
480J	UG/KG	CHRYSENE
2000	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
1900U	UG/KG	DI-N-OCTYLPHTHALATE
470J	UG/KG	BENZO(B)FLUORANTHENE
360J	UG/KG	BENZO(K)FLUORANTHENE
1900U	UG/KG	BENZO-A-PYRENE
270J	UG/KG	INDENO (1,2,3-CD) PYRENE
1900U	UG/KG	DIBENZO(A,H)ANTHRACENE
300J	UG/KG	BENZO(GH)PERYLENE
15	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4790 FY 2001 Project: 01-0528

Produced by: McConney, John

MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF Case No: 29099

Beginning: 04/02/2001 12:05

Id/Station: LC06SS / MD No: 0J52

Ending:

Media: SURFACE SOIL (0" - 12") D No: 0J52 Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
5200J	UG/KG	5 UNKNOWN
200NJ	UG/KG	LIMONENE
240NJ	UG/KG	STANNANE, BROMOTRIBUTYL-
170NJ	UG/KG	PHENANTHRENE, 2,5-DIMETHYL-
240NJ	UG/KG	11H-BENZO [B] FLUORENE
170NJ	UG/KG	PYRENE, 2-METHYL-
240NJ	UG/KG	PHOSPHORIC ACID, TRIS (2-METH
410NJ	UG/KG	BENZO [A] PYRENE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. 'compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4790 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 12:05

Id/Station: LC06SS /

MD No: 0J52

Inorg Contractor: SENTIN

Ending:

Media: SURFACE SOIL (0" - 12")

D No: 0J52

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
680UJ	UG/KG	BENZALDEHYDE
680U	UG/KG	PHENOL
680UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
680U	UG/KG	2-CHLOROPHENOL
680U	UG/KG	2-METHYLPHENOL
680UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
680U	UG/KG	ACETOPHENONE
680U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
680U	UG/KG	N-NITROSODI-N-PROPYLAMINE
680U	UG/KG	HEXACHLOROETHANE
680U	UG/KG	NITROBENZENE
680U	UG/KG	ISOPHORONE
680U	UG/KG	2-NITROPHENOL
680U	UG/KG	2,4-DIMETHYLPHENOL
680U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
680U	UG/KG	2,4-DICHLOROPHENOL
680U	UG/KG	NAPHTHALENE
680U	UG/KG	4-CHLOROANILINE
680U	UG/KG	HEXACHLOROBUTADIENE
680U	UG/KG	CAPROLACTAM
680U	UG/KG	4-CHLORO-3-METHYLPHENOL
680U	UG/KG	2-METHYLNAPHTHALENE
680U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
680U	UG/KG	2,4,6-TRICHLOROPHENOL
1700U	UG/KG	2,4,5-TRICHLOROPHENOL
680U	UG/KG	1,1-BIPHENYL
680U	UG/KG	2-CHLORONAPHTHALENE
1700UJ	UG/KG	2-NITROANILINE
680U	UG/KG	DIMETHYL PHTHALATE
680U	UG/KG	2,6-DINITROTOLUENE
680U	UG/KG	ACENAPHTHYLENE
1700U	UG/KG	3-NITROANILINE
110J	UG/KG	ACENAPHTHENE
1700U	UG/KG	2,4-DINITROPHENOL
1700U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
680U	UG/KG	DIBENZOFURAN
680U	UG/KG	2,4-DINITROTOLUENE
680U	UG/KG	DIETHYL PHTHALATE
680U	UG/KG	FLUORENE
680U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1700U	UG/KG	4-NITROANILINE
1700U	UG/KG	2-METHYL-4,6-DINITROPHENOL
680U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
680U	UG/KG	4-BROMOPHENYL PHENYL ETHER
680U	UG/KG	HEXACHLOROBENZENE (HCB)
680U	UG/KG	ATRAZINE
1700U	UG/KG	PENTACHLOROPHENOL
480J	UG/KG	PHENANTHRENE
680U	UG/KG	ANTHRACENE
680U	UG/KG	CARBAZOLE
680U	UG/KG	DI-N-BUTYLPHTHALATE
840	UG/KG	FLUORANTHENE
740	UG/KG	PYRENE
680UJ	UG/KG	BENZYL BUTYL PHTHALATE
680U	UG/KG	3,3'-DICHLOROBENZIDINE
400J	UG/KG	BENZO(A)ANTHRACENE
510J	UG/KG	CHRYSENE
680U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
680U	UG/KG	DI-N-OCTYLPHTHALATE
410J	UG/KG	BENZO(B)FLUORANTHENE
440J	UG/KG	BENZO(K)FLUORANTHENE
680U	UG/KG	BENZO-A-PYRENE
280J	UG/KG	INDENO (1,2,3-CD) PYRENE
120J	UG/KG	DIBENZO(A,H)ANTHRACENE
270J	UG/KG	BENZO(GH)PERYLENE
5	%	% MOISTURE

Average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

JC indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4788 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SS /

MD No: 0J50

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J50

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:43

Ending:

RESULTS	UNITS	ANALYTE
1700J	UG/KG	UNKNOWN

TA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

tual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

o indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4788 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 10:43

Id/Station: LC05SS /

MD No: QJ50

Inorg Contractor: SENTIN

Ending:

Media: SURFACE SOIL (0" - 12")

D No: QJ50

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
3400UJ	UG/KG	BENZALDEHYDE	3400U	UG/KG	DIBENZOFURAN
3400U	UG/KG	PHENOL	3400U	UG/KG	2,4-DINITROTOLUENE
3400UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER	3400U	UG/KG	DIETHYL PHTHALATE
3400U	UG/KG	2-CHLOROPHENOL	3400U	UG/KG	FLUORENE
3400U	UG/KG	2-METHYLPHENOL	3400U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
3400UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER	8600U	UG/KG	4-NITROANILINE
3400U	UG/KG	ACETOPHENONE	8600U	UG/KG	2-METHYL-4,6-DINITROPHENOL
3400U	UG/KG	(3-AND/OR 4-)METHYLPHENOL	3400U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
3400U	UG/KG	N-NITROSODI-N-PROPYLAMINE	3400U	UG/KG	4-BROMOPHENYL PHENYL ETHER
3400U	UG/KG	HEXACHLOROETHANE	3400U	UG/KG	HEXACHLOROBENZENE (HCB)
3400U	UG/KG	NITROBENZENE	3400U	UG/KG	ATRAZINE
3400U	UG/KG	ISOPHORONE	8600U	UG/KG	PENTACHLOROPHENOL
3400U	UG/KG	2-NITROPHENOL	830J	UG/KG	PHENANTHRENE
3400U	UG/KG	2,4-DIMETHYLPHENOL	3400U	UG/KG	ANTHRACENE
3400U	UG/KG	BIS(2-CHLOROETHOXY)METHANE	3400U	UG/KG	CARBAZOLE
3400U	UG/KG	2,4-DICHLOROPHENOL	3400U	UG/KG	DI-N-BUTYLPHTHALATE
3400U	UG/KG	NAPHTHALENE	1400J	UG/KG	FLUORANTHENE
3400U	UG/KG	4-CHLOROANILINE	1300J	UG/KG	PYRENE
3400U	UG/KG	HEXACHLOROBUTADIENE	3400UJ	UG/KG	BENZYL BUTYL PHTHALATE
3400U	UG/KG	CAPROLACTAM	3400U	UG/KG	3,3'-DICHLOROBENZIDINE
3400U	UG/KG	4-CHLORO-3-METHYLPHENOL	490J	UG/KG	BENZO(A)ANTHRACENE
3400U	UG/KG	2-METHYLNAPHTHALENE	740J	UG/KG	CHRYSENE
3400U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)	3400U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
3400U	UG/KG	2,4,6-TRICHLOROPHENOL	3400U	UG/KG	DI-N-OCTYLPHTHALATE
8600U	UG/KG	2,4,5-TRICHLOROPHENOL	580J	UG/KG	BENZO(B)FLUORANTHENE
3400U	UG/KG	1,1-BIPHENYL	590J	UG/KG	BENZO(K)FLUORANTHENE
3400U	UG/KG	2-CHLORONAPHTHALENE	3400U	UG/KG	BENZO-A-PYRENE
8600UJ	UG/KG	2-NITROANILINE	390J	UG/KG	INDENO (1,2,3-CD) PYRENE
3400U	UG/KG	DIMETHYL PHTHALATE	3400U	UG/KG	DIBENZO(A,H)ANTHRACENE
3400U	UG/KG	2,6-DINITROTOLUENE	390J	UG/KG	BENZO(GH)PERYLENE
3400U	UG/KG	ACENAPHTHYLENE	5	%	% MOISTURE
8600U	UG/KG	3-NITROANILINE			
3400U	UG/KG	ACENAPHTHENE			
8600U	UG/KG	2,4-DINITROPHENOL			
8600U	UG/KG	4-NITROPHENOL			

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4801 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SS /

MD No: 0J63

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J63

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

RESULTS	UNITS	ANALYTE
1600NJ	UG/KG	.ALPHA. -PINENE
1000NJ	UG/KG	BICYCLO [2.2.1] HEPTAN-2-OL, 1
21000J	UG/KG	14 UNKNOWN
1400NJ	UG/KG	BICYCLO [2.2.1] HEPTAN-2-ONE
2200NJ	UG/KG	3-CYCLOHEXEN-1-OL, 4-METHYL-
1500NJ	UG/KG	PHENOL, P-TERT-BUTYL-
920NJ	UG/KG	BENZALDEHYDE, 3-HYDROXY-4-ME
1500NJ	UG/KG	CARYOPHYLLENE
1600NJ	UG/KG	STANNANE, CHLOROTRIS (2-METHY
1700NJ	UG/KG	HEXADECANOIC ACID
510NJ	UG/KG	9, 10-ANTHRACENEDIONE
510NJ	UG/KG	1-PHENANTHRENECARBOXYLIC ACI

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4801 FY 2001 Project: 01-0528

EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC04SS / MD No: 0J63

Media: SURFACE SOIL (0" - 12") D No: 0J63

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2900J	UG/KG	BENZALDEHYDE
1800U	UG/KG	PHENOL
1800U	UG/KG	BIS(2-CHLOROETHYL) ETHER
1800U	UG/KG	2-CHLOROPHENOL
1800U	UG/KG	2-METHYLPHENOL
1800UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
1800U	UG/KG	ACETOPHENONE
1800U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
1800U	UG/KG	N-NITROSODI-N-PROPYLAMINE
1800U	UG/KG	HEXACHLOROETHANE
1800U	UG/KG	NITROBENZENE
1800U	UG/KG	ISOPHORONE
1800U	UG/KG	2-NITROPHENOL
1800U	UG/KG	2,4-DIMETHYLPHENOL
1800U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
1800U	UG/KG	2,4-DICHLOROPHENOL
2800	UG/KG	NAPHTHALENE
1800U	UG/KG	4-CHLOROANILINE
1800U	UG/KG	HEXACHLOROBUTADIENE
1800U	UG/KG	CAPROLACTAM
1800U	UG/KG	4-CHLORO-3-METHYLPHENOL
850J	UG/KG	2-METHYLNAPHTHALENE
1800U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
1800U	UG/KG	2,4,6-TRICHLOROPHENOL
4600U	UG/KG	2,4,5-TRICHLOROPHENOL
230J	UG/KG	1,1-BIPHENYL
1800U	UG/KG	2-CHLORONAPHTHALENE
4600U	UG/KG	2-NITROANILINE
1800U	UG/KG	DIMETHYL PHTHALATE
1800U	UG/KG	2,6-DINITROTOLUENE
1800U	UG/KG	ACENAPHTHYLENE
4600U	UG/KG	3-NITROANILINE
1400J	UG/KG	ACENAPHTHENE
4600U	UG/KG	2,4-DINITROPHENOL
4600U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
1400J	UG/KG	DIBENZOFURAN
1800U	UG/KG	2,4-DINITROTOLUENE
1800U	UG/KG	DIETHYL PHTHALATE
2100	UG/KG	FLUORENE
1800U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
4600U	UG/KG	4-NITROANILINE
4600U	UG/KG	2-METHYL-4,6-DINITROPHENOL
1800U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
1800UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
1800UJ	UG/KG	HEXACHLOROBENZENE (HCB)
1800U	UG/KG	ATRAZINE
4600UJ	UG/KG	PENTACHLOROPHENOL
7600	UG/KG	PHENANTHRENE
1900	UG/KG	ANTHRACENE
1700J	UG/KG	CARBAZOLE
1800U	UG/KG	DI-N-BUTYLPHTHALATE
5400	UG/KG	FLUORANTHENE
8200	UG/KG	PYRENE
2000	UG/KG	BENZYL BUTYL PHTHALATE
1800U	UG/KG	3,3'-DICHLOROBENZIDINE
3100	UG/KG	BENZO(A)ANTHRACENE
1700J	UG/KG	CHRYSENE
4800	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
1800U	UG/KG	DI-N-OCTYLPHTHALATE
2000	UG/KG	BENZO(B)FLUORANTHENE
2800	UG/KG	BENZO(K)FLUORANTHENE
2500U	UG/KG	BENZO-A-PYRENE
520J	UG/KG	INDENO (1,2,3-CD) PYRENE
190J	UG/KG	DIBENZO(A,H)ANTHRACENE
370J	UG/KG	BENZO(GH)PERYLENE
11	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
t-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4780 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 03/30/2001 16:00

Id/Station: LC03SS /

MD No: 0J42

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J42

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
3400J	UG/KG	UNKNOWN

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4780 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SS /

MD No: 0J42

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J42

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2000UJ	UG/KG	BENZALDEHYDE
2000U	UG/KG	PHENOL
2000UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
2000U	UG/KG	2-CHLOROPHENOL
2000U	UG/KG	2-METHYLPHENOL
2000UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
2000U	UG/KG	ACETOPHENONE
2000U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
2000U	UG/KG	N-NITROSODI-N-PROPYLAMINE
2000U	UG/KG	HEXACHLOROETHANE
2000U	UG/KG	NITROBENZENE
2000U	UG/KG	ISOPHORONE
2000U	UG/KG	2-NITROPHENOL
2000U	UG/KG	2,4-DIMETHYLPHENOL
2000U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
2000U	UG/KG	2,4-DICHLOROPHENOL
2000U	UG/KG	NAPHTHALENE
2000U	UG/KG	4-CHLOROANILINE
2000U	UG/KG	HEXACHLOROBUTADIENE
2000U	UG/KG	CAPROLACTAM
2000U	UG/KG	4-CHLORO-3-METHYLPHENOL
2000U	UG/KG	2-METHYLNAPHTHALENE
2000U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
2000U	UG/KG	2,4,6-TRICHLOROPHENOL
4900U	UG/KG	2,4,5-TRICHLOROPHENOL
2000U	UG/KG	1,1-BIPHENYL
2000U	UG/KG	2-CHLORONAPHTHALENE
4900UJ	UG/KG	2-NITROANILINE
2000U	UG/KG	DIMETHYL PHTHALATE
2000U	UG/KG	2,6-DINITROTOLUENE
2000U	UG/KG	ACENAPHTHYLENE
4900U	UG/KG	3-NITROANILINE
2000U	UG/KG	ACENAPHTHENE
4900U	UG/KG	2,4-DINITROPHENOL
4900U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
2000U	UG/KG	DIBENZOFURAN
2000U	UG/KG	2,4-DINITROTOLUENE
2000U	UG/KG	DIETHYL PHTHALATE
2000U	UG/KG	FLUORENE
2000U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
4900U	UG/KG	4-NITROANILINE
4900U	UG/KG	2-METHYL-4,6-DINITROPHENOL
2000U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
2000U	UG/KG	4-BROMOPHENYL PHENYL ETHER
2000U	UG/KG	HEXACHLOROBENZENE (HCB)
2000U	UG/KG	ATRAZINE
4900U	UG/KG	PENTACHLOROPHENOL
200J	UG/KG	PHENANTHRENE
2000U	UG/KG	ANTHRACENE
2000U	UG/KG	CARBAZOLE
2000U	UG/KG	DI-N-BUTYLPHTHALATE
500J	UG/KG	FLUORANTHENE
460J	UG/KG	PYRENE
2000UJ	UG/KG	BENZYL BUTYL PHTHALATE
2000U	UG/KG	3,3'-DICHLOROBENZIDINE
240J	UG/KG	BENZO(A)ANTHRACENE
350J	UG/KG	CHRYSENE
2000U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
2000U	UG/KG	DI-N-OCTYLPHTHALATE
330J	UG/KG	BENZO(B)FLUORANTHENE
280J	UG/KG	BENZO(K)FLUORANTHENE
2000U	UG/KG	BENZO-A-PYRENE
2000U	UG/KG	INDENO (1,2,3-CD) PYRENE
2000U	UG/KG	DIBENZO(A,H)ANTHRACENE
2000U	UG/KG	BENZO(GH)PERYLENE
17	%	% MOISTURE

Average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

IC indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4776 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC02SS / MD No: 0J38

Media: SURFACE SOIL (0" - 12") D No: 0J38

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:35

Ending:

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
7300J	UG/KG	16 UNKNOWNNS
320NJ	UG/KG	HEXADECANOIC ACID
330JN	UG/KG	UNKNOWN AMIDE
190NJ	UG/KG	1-OCTADECENE
480NJ	UG/KG	.GAMMA.-SITOSTEROL
200JN	UG/KG	UNKNOWN STEROID

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

Sample 4776 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SS /

MD No: 0J38

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J38

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:35

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
420UJ	UG/KG	BENZALDEHYDE
420U	UG/KG	PHENOL
420UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
420U	UG/KG	2-CHLOROPHENOL
420U	UG/KG	2-METHYLPHENOL
420UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
420U	UG/KG	ACETOPHENONE
420U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
420U	UG/KG	N-NITROSODI-N-PROPYLAMINE
420U	UG/KG	HEXACHLOROETHANE
420U	UG/KG	NITROBENZENE
420U	UG/KG	ISOPHORONE
420U	UG/KG	2-NITROPHENOL
420U	UG/KG	2,4-DIMETHYLPHENOL
420U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
420U	UG/KG	2,4-DICHLOROPHENOL
420U	UG/KG	NAPHTHALENE
420U	UG/KG	4-CHLOROANILINE
420U	UG/KG	HEXACHLOROBUTADIENE
420U	UG/KG	CAPROLACTAM
420U	UG/KG	4-CHLORO-3-METHYLPHENOL
420U	UG/KG	2-METHYLNAPHTHALENE
420U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
420U	UG/KG	2,4,6-TRICHLOROPHENOL
1000U	UG/KG	2,4,5-TRICHLOROPHENOL
420U	UG/KG	1,1-BIPHENYL
420U	UG/KG	2-CHLORONAPHTHALENE
1000UJ	UG/KG	2-NITROANILINE
420U	UG/KG	DIMETHYL PHTHALATE
420U	UG/KG	2,6-DINITROTOLUENE
420U	UG/KG	ACENAPHTHYLENE
1000U	UG/KG	3-NITROANILINE
420U	UG/KG	ACENAPHTHENE
1000U	UG/KG	2,4-DINITROPHENOL
1000U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
420U	UG/KG	DIBENZOFURAN
420U	UG/KG	2,4-DINITROTOLUENE
420U	UG/KG	DIETHYL PHTHALATE
420U	UG/KG	FLUORENE
420U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1000U	UG/KG	4-NITROANILINE
1000U	UG/KG	2-METHYL-4,6-DINITROPHENOL
420U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
420U	UG/KG	4-BROMOPHENYL PHENYL ETHER
420U	UG/KG	HEXACHLOROBENZENE (HCB)
420U	UG/KG	ATRAZINE
1000U	UG/KG	PENTACHLOROPHENOL
420U	UG/KG	PHENANTHRENE
420U	UG/KG	ANTHRACENE
420U	UG/KG	CARBAZOLE
420U	UG/KG	DI-N-BUTYLPHTHALATE
420U	UG/KG	FLUORANTHENE
420U	UG/KG	PYRENE
420UJ	UG/KG	BENZYL BUTYL PHTHALATE
420U	UG/KG	3,3'-DICHLOROBENZIDINE
420U	UG/KG	BENZO(A)ANTHRACENE
420U	UG/KG	CHRYSENE
420U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
420U	UG/KG	DI-N-OCTYLPHTHALATE
420U	UG/KG	BENZO(B)FLUORANTHENE
420U	UG/KG	BENZO(K)FLUORANTHENE
420U	UG/KG	BENZO-A-PYRENE
420U	UG/KG	INDENO (1,2,3-CD) PYRENE
420U	UG/KG	DIBENZO(A,H)ANTHRACENE
420U	UG/KG	BENZO(GHI)PERYLENE
22	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4805 FY 2001 Project: 01-0528

Produced by: McConney, John

MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF Case No: 29099

Beginning: 04/03/2001 11:20

Id/Station: LC01SS / MD No: 0J67

Ending:

Media: SURFACE SOIL (0" - 12") D No: 0J67 Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
61000J	UG/KG	17 UNKNOWN
980NJ	UG/KG	1,3-BENZODIOXOLE, 5- (2-PROPE
3500NJ	UG/KG	1,4-METHANOAZULENE, DECAHYDR
600NJ	UG/KG	THUJOPSENE
650NJ	UG/KG	BENZENE, 1-METHYL-4- (1,2,2-T
2800NJ	UG/KG	CYCLOHEXANEMETHANOL, 4-ETHEN
1600NJ	UG/KG	CEDROL
570NJ	UG/KG	HEXADECANOIC ACID, METHYL ES
1600NJ	UG/KG	HEXADECANOIC ACID
700NJ	UG/KG	PHENANTHRENE, 1,2,3,4,4A, 9,1
2200NJ	UG/KG	1-DOCOSANOL
5400NJ	UG/KG	FURO [3',4':6,7] NAPHTHO [2,3-D
15000JN	UG/KG	2 UNKNOWN STEROIDS

ATA REPORTED AS IDENTIFIED BY CLP LAB -IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4805 FY 2001 Project: 01-0528

EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC01SS / MD No: 0J67  
Media: SURFACE SOIL (0" - 12") D No: 0J67

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/03/2001 11:20  
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1800U	UG/KG	BENZALDEHYDE
1800U	UG/KG	PHENOL
1800U	UG/KG	BIS(2-CHLOROETHYL) ETHER
1800U	UG/KG	2-CHLOROPHENOL
1800U	UG/KG	2-METHYLPHENOL
1800UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
1800U	UG/KG	ACETOPHENONE
1800U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
1800U	UG/KG	N-NITROSODI-N-PROPYLAMINE
1800U	UG/KG	HEXACHLOROETHANE
1800U	UG/KG	NITROBENZENE
1800U	UG/KG	ISOPHORONE
1800U	UG/KG	2-NITROPHENOL
1800U	UG/KG	2,4-DIMETHYLPHENOL
1800U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
1800U	UG/KG	2,4-DICHLOROPHENOL
1800U	UG/KG	NAPHTHALENE
1800U	UG/KG	4-CHLOROANILINE
1800U	UG/KG	HEXACHLOROBUTADIENE
1800U	UG/KG	CAPROLACTAM
1800U	UG/KG	4-CHLORO-3-METHYLPHENOL
1800U	UG/KG	2-METHYLNAPHTHALENE
1800U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
1800U	UG/KG	2,4,6-TRICHLOROPHENOL
4500U	UG/KG	2,4,5-TRICHLOROPHENOL
1800U	UG/KG	1,1-BIPHENYL
1800U	UG/KG	2-CHLORONAPHTHALENE
4500U	UG/KG	2-NITROANILINE
1800U	UG/KG	DIMETHYLPHTHALATE
1800U	UG/KG	2,6-DINITROTOLUENE
1800U	UG/KG	ACENAPHTHYLENE
4500U	UG/KG	3-NITROANILINE
1800U	UG/KG	ACENAPHTHENE
4500U	UG/KG	2,4-DINITROPHENOL
4500U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
1800U	UG/KG	DIBENZOFURAN
1800U	UG/KG	2,4-DINITROTOLUENE
1800U	UG/KG	DIETHYL PHTHALATE
1800U	UG/KG	FLUORENE
1800U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
4500U	UG/KG	4-NITROANILINE
4500U	UG/KG	2-METHYL-4,6-DINITROPHENOL
1800U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
1800UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
1800UJ	UG/KG	HEXACHLOROENZENE (HCB)
1800U	UG/KG	ATRAZINE
4500UJ	UG/KG	PENTACHLOROPHENOL
1800U	UG/KG	PHENANTHRENE
1800U	UG/KG	ANTHRACENE
1800U	UG/KG	CARBAZONE
1800U	UG/KG	DI-N-BUTYL PHTHALATE
400J	UG/KG	FLUORANTHENE
360J	UG/KG	PYRENE
1800U	UG/KG	BENZYL BUTYL PHTHALATE
1800U	UG/KG	3,3'-DICHLOROBENZIDINE
1800U	UG/KG	BENZO(A)ANTHRACENE
290J	UG/KG	CHRYSENE
1800U	UG/KG	BIS(2-ETHYLHEXYL)PHTHALATE
1800U	UG/KG	DI-N-OCTYLPHTHALATE
190J	UG/KG	BENZO(B)FLUORANTHENE
1800U	UG/KG	BENZO(K)FLUORANTHENE
1800U	UG/KG	BENZO(B)PYRENE
1800U	UG/KG	INDEN(1,2,3-CD)PYRENE
1800U	UG/KG	DIBENZO(AH)ANTHRACENE
1800U	UG/KG	BENZO(G)HIREBYLENE
10	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

MAY 1 1991

## MEMORANDUM

Date: 05/01/2001

Subject: Results of EXTRACTABLES Sample Analysis  
01-0529 Latex Construction Co  
Thunderbolt, GA

From: Revell, Dennis

To: King, CharlesL

A handwritten signature in black ink, appearing to be "DR" or "Dennis Revell".

CC: Heather Kennedy  
START/TT

Thru: Cosgrove, Bill  
Chief, Organic Chemistry Section  
Analytical Support Branch

A handwritten signature in black ink, appearing to be "BC" or "Bill Cosgrove".

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
4804	heptachlor, alpha-chlordane, gamma-chlordane	N	difference in columns
4805	endrin ketone	N	difference in columns
4808,4815	all compounds	J	low surrogate recovery
4821	dieldrin	N	difference in columns

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
<b><u>PEST</u></b>			
4775,4782,4783	all compounds	J	exceeded holding times
4775,4782-4785, 4787,4792,4800, 4808,4811,4812, 4817,4820,4821	endosulfan I, endosulfan II	J	warning low in PE sample
4776-4781,4786, 4788-4791,4793- 4799,4801-4807, 4809,4810,4815, 4818,4819	endosulfan I	R	missed in PE sample
4776,4777,4779- 4781,4785-4787, 4789-4793	4,4'-DDT	J	erratic response factor
4777,4780	dieldrin	N	difference in columns
4778	dieldrin, endrin aldehyde	N	difference in columns
4787,4789	all compounds	J	low surrogate recovery
4788	4,4'-DDT	N	difference in columns
4788	endosulfan II, 4,4'-DDT, methoxychlor, gamma-chlordane	J	high surrogate recovery
4790	dieldrin	N	difference in columns
4791	methoxychlor	J,N	high surrogate recovery, difference in columns
4795,4802	dieldrin	N	difference in columns
4796	aroclor-1254	J	< quantitation limit
4798	alpha-BHC, dieldrin	N	difference in columns
4803	4,4'-DDT, endrin ketone, gamma-chlordane	N	difference in columns

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

Affected Samples	Compound or Fraction	Flag Used	Reason
4803-4807,4815	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-bromophenyl-phenylether, hexachlorobenzene, pentachlorophenol	J	erratic response factor
4804	fluoranthene, pyrene	J	< quantitation limit
4805	fluoranthene, pyrene, chrysene, benzo(b)fluoranthene	J	< quantitation limit
4807	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4808	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor
4809-4810	benzaldehyde, 2,2'-oxybis(1-chloropropane), benzo(g,h,i)perylene	J	erratic response factor
4809	phenanthrene, fluoranthene, pyrene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4811,4812,4817-4820	benzaldehyde, 2,2'-oxybis(1-chloropropane), hexachlorobenzene, atrazine, 3,3'-dichlorobenzidine	J	erratic response factor
4811	naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, fluoranthene	J	< quantitation limit
4812	acenaphthene, fluorene, phenanthrene	J	< quantitation limit
4819	benzaldehyde, fluoranthene, pyrene, chrysene	J	< quantitation limit
4821	benzaldehyde, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, atrazine, benzo(k)fluoranthene	J	erratic response factor
4821	naphthalene, 2-methylnaphthalene, phenanthrene, anthracene, fluoranthene	J	< quantitation limit

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
4795	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4797	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene	J	< quantitation limit
4799,4801,4802	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-bromophenyl-phenylether, hexachlorobenzene, pentachlorophenol	J	erratic response factor
4799	fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4800	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), hexachlorobutadiene, hexachlorocyclopentadiene, 4-nitrophenol, atrazine, di-n-octylphthalate	J	erratic response factor
4801	2-methylnaphthalene, 1,1'-biphenyl, acenaphthene, dibenzofuran, carbazole, chrysene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
4802	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4803	benzaldehyde, phenol, acetophenone, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit

# ORGANIC DATA QUALIFIER REPORT

Case Number:	29099	Project Number	01-0528	SAS Number	N/A
Site ID:	Latex Construction Co, Thunderbolt, GA				
Date:	5/4/01				
<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>		
4778	2-methylphenol, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit		
4778-4781,4786, 4788-4791,4793	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, butylbenzylphthalate	J	erratic response factor		
4780	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit		
4782-4783,4785	benzaldehyde	J	erratic response factor		
4784	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor		
4787,4792	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 4-nitrophenol	J	erratic response factor		
4788,4791	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit		
4790	acenaphthene, phenanthrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, benzo(g,h,i)perylene	J	< quantitation limit		
4794-4798	benzaldehyde, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, benzo(k)fluoranthene	J	erratic response factor		
4794	fluoranthene, pyrene	J	< quantitation limit		

# ORGANIC DATA QUALIFIER REPORT

Case Number:	29099	Project Number	01-0528	SAS Number	N/A
Site ID:	Latex Construction Co, Thunderbolt, GA				
Date:	5/4/01				

Affected Samples	Compound or Fraction	Flag Used	Reason
<u>VOA</u>			
4776,4779,4788, 4794,4795,4797-4799,4801-4807, 4815	dichlorodifluoromethane, chloromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, methylcyclohexane, 1,2-dibromo-3-chloropropane	J	erratic response factor
4777-4778,4780, 4781,4786,4789-4791,4793,4822	dichlorodifluoromethane, chloromethane, vinyl chloride, bromomethane, trichlorofluoromethane, methylene chloride	J	erratic response factor
4779,4794,4799, 4807,4809,4810, 4815	acetone	J	contaminated storage blank
4796,4809,4810, 4818,4819	dichlorodifluoromethane, chloromethane, trichlorofluoromethane, acetone, methyl acetate, methylene chloride, tert-butyl methyl ether, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, 1,2-dibromoethane, 1,3-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, 1,2,4-trichlorobenzene	J	erratic response factor
<u>BNA</u>			
4775	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor
4776-4777	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, butylbenzylphthalate	J	erratic response factor
4777	phenanthrene, anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

MAY 30 2000

## MEMORANDUM

Date: 05/24/2001

Subject: Results of EXTRACTABLES Sample Analysis  
01-0528 Latex Construction Co  
Thunderbolt, GA

From: McConney, John

To: King, CharlesL

CC: Heather Kennedy  
START/TT

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

Sample 4493 FY 2001 Project: 01-0529

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC02RB /

Media: EQUIPMENT RINSE BLANK

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:50

Ending:

RESULTS	UNITS	ANALYTE
900LN	UG/L	ISOPROPANOL

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4493 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC02RB /

Media: EQUIPMENT RINSE BLANK

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:50

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
13.	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4495 FY 2001 Project: 01-0529

Produced by: Allen, Frank

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Beginning: 03/30/2001 10:10

Id/Station: LC01RB /

Ending:

Media: EQUIPMENT RINSE BLANK

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
12.	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4488 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC01TB /

Media: TRIP BLANK - WATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 09:40

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
13.	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4822 FY 2001 Project: 01-0528	Produced by: McConney, John
MISCELLANEOUS COMPOUNDS	Requestor:
Facility: Latex Construction Co Thunderbolt, GA	Project Leader: CKING
Program: SF Case No: 29099	Beginning: 04/04/2001
Id/Station: LC01BS /	Ending:
Media: FIELD QC D No: 0J36	Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
11J	UG/KG	UNKNOWN SILOXANE

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

√-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the-number is the minimum quantitation limit.  
Z-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4822 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01BS /

Media: FIELD QC

D No: 0J36

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/04/2001

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE
10UJ	UG/KG	CHLOROMETHANE
10UJ	UG/KG	VINYL CHLORIDE
10UJ	UG/KG	BROMOMETHANE
10U	UG/KG	CHLOROETHANE
10UJ	UG/KG	TRICHLOROFLUOROMETHANE
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
10U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
10U	UG/KG	ACETONE
10U	UG/KG	CARBON DISULFIDE
10U	UG/KG	METHYL ACETATE
17UJ	UG/KG	METHYLENE CHLORIDE
10U	UG/KG	TRANS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
10U	UG/KG	1,1-DICHLOROETHANE
10U	UG/KG	CIS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL ETHYL KETONE
10U	UG/KG	CHLOROFORM
10U	UG/KG	1,1,1-TRICHLOROETHANE
10U	UG/KG	CYCLOHEXANE
10U	UG/KG	CARBON TETRACHLORIDE
10U	UG/KG	BENZENE
10U	UG/KG	1,2-DICHLOROETHANE
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
10U	UG/KG	METHYLCYCLOHEXANE
10U	UG/KG	1,2-DICHLOROPROPANE
10U	UG/KG	BROMODICHLOROMETHANE
10U	UG/KG	CIS-1,3-DICHLOROPROPENE
10U	UG/KG	METHYL ISOBUTYL KETONE
10U	UG/KG	TOLUENE
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE
10U	UG/KG	1,1,2-TRICHLOROETHANE
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
10U	UG/KG	METHYL BUTYL KETONE
10U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10U	UG/KG	CHLOROBENZENE
10U	UG/KG	ETHYL BENZENE
10U	UG/KG	TOTAL XYLENES
10U	UG/KG	STYRENE
10U	UG/KG	BROMOFORM
10U	UG/KG	ISOPROPYLBENZENE
10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	1,2-DICHLOROBENZENE
10U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	1,2,4-TRICHLOROBENZENE
0	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.



Sample 4819 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC12SD /

MD No: 0J81

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J81

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
18UJ	UG/KG	DICHLORODIFLUOROMETHANE
18UJ	UG/KG	CHLOROMETHANE
18U	UG/KG	VINYL CHLORIDE
18U	UG/KG	BROMOMETHANE
18U	UG/KG	CHLOROETHANE
18UJ	UG/KG	TRICHLOROFLUOROMETHANE
18U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
18U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
18UJ	UG/KG	ACETONE
18U	UG/KG	CARBON DISULFIDE
18UJ	UG/KG	METHYL ACETATE
25UJ	UG/KG	METHYLENE CHLORIDE
18U	UG/KG	TRANS-1,2-DICHLOROETHENE
18UJ	UG/KG	METHYL T-BUTYL ETHER (MTBE)
18U	UG/KG	1,1-DICHLOROETHANE
18U	UG/KG	CIS-1,2-DICHLOROETHENE
18UJ	UG/KG	METHYL ETHYL KETONE
18U	UG/KG	CHLOROFORM
18U	UG/KG	1,1,1-TRICHLOROETHANE
18U	UG/KG	CYCLOHEXANE
18U	UG/KG	CARBON TETRACHLORIDE
18U	UG/KG	BENZENE
18U	UG/KG	1,2-DICHLOROETHANE
18U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
18U	UG/KG	METHYLCYCLOHEXANE
18U	UG/KG	1,2-DICHLOROPROPANE
18U	UG/KG	BROMODICHLOROMETHANE
18U	UG/KG	CIS-1,3-DICHLOROPROPENE
18UJ	UG/KG	METHYL ISOBUTYL KETONE
18U	UG/KG	TOLUENE
18U	UG/KG	TRANS-1,3-DICHLOROPROPENE
18U	UG/KG	1,1,2-TRICHLOROETHANE
18U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
18UJ	UG/KG	METHYL BUTYL KETONE
18U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
18UJ	UG/KG	1,2-DIBROMOETHANE (EDB)
18U	UG/KG	CHLOROBENZENE
18U	UG/KG	ETHYL BENZENE
18U	UG/KG	TOTAL XYLENES
18U	UG/KG	STYRENE
18U	UG/KG	BROMOFORM
18U	UG/KG	ISOPROPYLBENZENE
18U	UG/KG	1,1,2,2-TETRACHLOROETHANE
18UJ	UG/KG	1,3-DICHLOROBENZENE
18U	UG/KG	1,4-DICHLOROBENZENE
18UJ	UG/KG	1,2-DICHLOROBENZENE
18UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
18UJ	UG/KG	1,2,4-TRICHLOROBENZENE
46	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

&lt;-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4807 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC11SD / MD No: 0J69

Media: SEDIMENT D No: 0J69

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:45

Ending:

RESULTS	UNITS	ANALYTE
160NJ	UG/KG	1,4-METHANOAZULENE, DECAHYDR
35JN	UG/KG	CYCLIC ALKENE

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4807 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC11SD / MD No: 0J69

Media: SEDIMENT D No: 0J69

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:45

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
12UJ	UG/KG	DICHLORODIFLUOROMETHANE	12U	UG/KG	1,2-DIBROMOETHANE (EDB)
12UJ	UG/KG	CHLOROMETHANE	12U	UG/KG	CHLOROBENZENE
12U	UG/KG	VINYL CHLORIDE	12U	UG/KG	ETHYL BENZENE
12U	UG/KG	BROMOMETHANE	12U	UG/KG	TOTAL XYLENES
12U	UG/KG	CHLOROETHANE	12U	UG/KG	STYRENE
12U	UG/KG	TRICHLOROFLUOROMETHANE	12U	UG/KG	BROMOFORM
12U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	12U	UG/KG	ISOPROPYLBENZENE
12UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	12U	UG/KG	1,1,2,2-TETRACHLOROETHANE
31J	UG/KG	ACETONE	12U	UG/KG	1,3-DICHLOROBENZENE
12U	UG/KG	CARBON DISULFIDE	12U	UG/KG	1,4-DICHLOROBENZENE
12U	UG/KG	METHYL ACETATE	12U	UG/KG	1,2-DICHLOROBENZENE
34U	UG/KG	METHYLENE CHLORIDE	12UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
12U	UG/KG	TRANS-1,2-DICHLOROETHENE	12U	UG/KG	1,2,4-TRICHLOROBENZENE
12U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	21	%	% MOISTURE
12U	UG/KG	1,1-DICHLOROETHANE			
12U	UG/KG	CIS-1,2-DICHLOROETHENE			
12U	UG/KG	METHYL ETHYL KETONE			
12U	UG/KG	CHLOROFORM			
12U	UG/KG	1,1,1-TRICHLOROETHANE			
12U	UG/KG	CYCLOHEXANE			
12UJ	UG/KG	CARBON TETRACHLORIDE			
12U	UG/KG	BENZENE			
12U	UG/KG	1,2-DICHLOROETHANE			
12U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
12UJ	UG/KG	METHYLCYCLOHEXANE			
12U	UG/KG	1,2-DICHLOROPROPANE			
12U	UG/KG	BROMODICHLOROMETHANE			
12U	UG/KG	CIS-1,3-DICHLOROPROPENE			
12U	UG/KG	METHYL ISOBUTYL KETONE			
12U	UG/KG	TOLUENE			
12U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
12U	UG/KG	1,1,2-TRICHLOROETHANE			
12U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
12U	UG/KG	METHYL BUTYL KETONE			
12U	UG/KG	DIBROMOCHLOROMETHANE			

Sample 4794 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC10SD / MD No: 0J56

Media: SEDIMENT D No: 0J56

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
13UJ	UG/KG	DICHLORODIFLUOROMETHANE	13U	UG/KG	1,2-DIBROMOETHANE (EDB)
13UJ	UG/KG	CHLOROMETHANE	13U	UG/KG	CHLOROBENZENE
13U	UG/KG	VINYL CHLORIDE	13U	UG/KG	ETHYL BENZENE
13U	UG/KG	BROMOMETHANE	13U	UG/KG	TOTAL XYLENES
13U	UG/KG	CHLOROETHANE	13U	UG/KG	STYRENE
13U	UG/KG	TRICHLOROFLUOROMETHANE	13U	UG/KG	BROMOFORM
13U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	13U	UG/KG	ISOPROPYLBENZENE
13UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	13U	UG/KG	1,1,2,2-TETRACHLOROETHANE
130J	UG/KG	ACETONE	13U	UG/KG	1,3-DICHLOROBENZENE
13U	UG/KG	CARBON DISULFIDE	13U	UG/KG	1,4-DICHLOROBENZENE
13U	UG/KG	METHYL ACETATE	13U	UG/KG	1,2-DICHLOROBENZENE
15U	UG/KG	METHYLENE CHLORIDE	13UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
13U	UG/KG	TRANS-1,2-DICHLOROETHENE	13U	UG/KG	1,2,4-TRICHLOROBENZENE
13U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	30	%	% MOISTURE
13U	UG/KG	1,1-DICHLOROETHANE			
13U	UG/KG	CIS-1,2-DICHLOROETHENE			
13U	UG/KG	METHYL ETHYL KETONE			
13U	UG/KG	CHLOROFORM			
13U	UG/KG	1,1,1-TRICHLOROETHANE			
13U	UG/KG	CYCLOHEXANE			
13UJ	UG/KG	CARBON TETRACHLORIDE			
13U	UG/KG	BENZENE			
13U	UG/KG	1,2-DICHLOROETHANE			
13U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
13UJ	UG/KG	METHYLCYCLOHEXANE			
13U	UG/KG	1,2-DICHLOROPROPANE			
13U	UG/KG	BROMODICHLOROMETHANE			
13U	UG/KG	CIS-1,3-DICHLOROPROPENE			
13U	UG/KG	METHYL ISOBUTYL KETONE			
13U	UG/KG	TOLUENE			
13U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
13U	UG/KG	1,1,2-TRICHLOROETHANE			
13U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
13U	UG/KG	METHYL BUTYL KETONE			
13U	UG/KG	DIBROMOCHLOROMETHANE			

Sample 4793 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC09SD / MD No: 0J55

Media: SEDIMENT D No: 0J55

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 13:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
34UJ	UG/KG	DICHLORODIFLUOROMETHANE	34U	UG/KG	1,2-DIBROMOETHANE (EDB)
34UJ	UG/KG	CHLOROMETHANE	34U	UG/KG	CHLOROBENZENE
34UJ	UG/KG	VINYL CHLORIDE	34U	UG/KG	ETHYL BENZENE
34UJ	UG/KG	BROMOMETHANE	34U	UG/KG	TOTAL XYLENES
34U	UG/KG	CHLOROETHANE	34U	UG/KG	STYRENE
34UJ	UG/KG	TRICHLOROFLUOROMETHANE	34U	UG/KG	BROMOFORM
34U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	34U	UG/KG	ISOPROPYLBENZENE
34U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	34U	UG/KG	1,1,2,2-TETRACHLOROETHANE
34U	UG/KG	ACETONE	34U	UG/KG	1,3-DICHLOROBENZENE
34U	UG/KG	CARBON DISULFIDE	34U	UG/KG	1,4-DICHLOROBENZENE
34U	UG/KG	METHYL ACETATE	34U	UG/KG	1,2-DICHLOROBENZENE
53UJ	UG/KG	METHYLENE CHLORIDE	34U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
34U	UG/KG	TRANS-1,2-DICHLOROETHENE	34U	UG/KG	1,2,4-TRICHLOROBENZENE
34U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	75	%	% MOISTURE
34U	UG/KG	1,1-DICHLOROETHANE			
34U	UG/KG	CIS-1,2-DICHLOROETHENE			
34U	UG/KG	METHYL ETHYL KETONE			
34U	UG/KG	CHLOROFORM			
34U	UG/KG	1,1,1-TRICHLOROETHANE			
34U	UG/KG	CYCLOHEXANE			
34U	UG/KG	CARBON TETRACHLORIDE			
34U	UG/KG	BENZENE			
34U	UG/KG	1,2-DICHLOROETHANE			
34U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
34U	UG/KG	METHYLCYCLOHEXANE			
34U	UG/KG	1,2-DICHLOROPROPANE			
34U	UG/KG	BROMODICHLOROMETHANE			
34U	UG/KG	CIS-1,3-DICHLOROPROPENE			
34U	UG/KG	METHYL ISOBUTYL KETONE			
34U	UG/KG	TOLUENE			
34U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
34U	UG/KG	1,1,2-TRICHLOROETHANE			
34U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
34U	UG/KG	METHYL BUTYL KETONE			
34U	UG/KG	DIBROMOCHLOROMETHANE			

Sample 4786 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC08SD / MD No: 0J48

Media: SEDIMENT D No: 0J48

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
42UJ	UG/KG	DICHLORODIFLUOROMETHANE	42U	UG/KG	1,2-DIBROMOETHANE (EDB)
42UJ	UG/KG	CHLOROMETHANE	42U	UG/KG	CHLOROBENZENE
42UJ	UG/KG	VINYL CHLORIDE	42U	UG/KG	ETHYL BENZENE
42UJ	UG/KG	BROMOMETHANE	42U	UG/KG	TOTAL XYLENES
42U	UG/KG	CHLOROETHANE	42U	UG/KG	STYRENE
42UJ	UG/KG	TRICHLOROFLUOROMETHANE	42U	UG/KG	BROMOFORM
42U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	42U	UG/KG	ISOPROPYLBENZENE
42U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	42U	UG/KG	1,1,2,2-TETRACHLOROETHANE
42U	UG/KG	ACETONE	42U	UG/KG	1,3-DICHLOROBENZENE
42U	UG/KG	CARBON DISULFIDE	42U	UG/KG	1,4-DICHLOROBENZENE
42U	UG/KG	METHYL ACETATE	42U	UG/KG	1,2-DICHLOROBENZENE
61UJ	UG/KG	METHYLENE CHLORIDE	42U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
42U	UG/KG	TRANS-1,2-DICHLOROETHENE	42U	UG/KG	1,2,4-TRICHLOROBENZENE
42U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	76	%	% MOISTURE
42U	UG/KG	1,1-DICHLOROETHANE			
42U	UG/KG	CIS-1,2-DICHLOROETHENE			
42U	UG/KG	METHYL ETHYL KETONE			
42U	UG/KG	CHLOROFORM			
42U	UG/KG	1,1,1-TRICHLOROETHANE			
42U	UG/KG	CYCLOHEXANE			
42U	UG/KG	CARBON TETRACHLORIDE			
42U	UG/KG	BENZENE			
42U	UG/KG	1,2-DICHLOROETHANE			
42U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
42U	UG/KG	METHYLCYCLOHEXANE			
42U	UG/KG	1,2-DICHLOROPROPANE			
42U	UG/KG	BROMODICHLOROMETHANE			
42U	UG/KG	CIS-1,3-DICHLOROPROPENE			
42U	UG/KG	METHYL ISOBUTYL KETONE			
42U	UG/KG	TOLUENE			
42U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
42U	UG/KG	1,1,2-TRICHLOROETHANE			
42U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
42U	UG/KG	METHYL BUTYL KETONE			
42U	UG/KG	DIBROMOCHLOROMETHANE			

Sample 4810 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SD /

MD No: 0J72

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J72

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 13:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
18UJ	UG/KG	DICHLORODIFLUOROMETHANE
18UJ	UG/KG	CHLOROMETHANE
18U	UG/KG	VINYL CHLORIDE
18U	UG/KG	BROMOMETHANE
18U	UG/KG	CHLOROETHANE
18UJ	UG/KG	TRICHLOROFLUOROMETHANE
18U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
18U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
23J	UG/KG	ACETONE
18U	UG/KG	CARBON DISULFIDE
18UJ	UG/KG	METHYL ACETATE
31UJ	UG/KG	METHYLENE CHLORIDE
18U	UG/KG	TRANS-1,2-DICHLOROETHENE
18UJ	UG/KG	METHYL T-BUTYL ETHER (MTBE)
18U	UG/KG	1,1-DICHLOROETHANE
18U	UG/KG	CIS-1,2-DICHLOROETHENE
18UJ	UG/KG	METHYL ETHYL KETONE
18U	UG/KG	CHLOROFORM
18U	UG/KG	1,1,1-TRICHLOROETHANE
18U	UG/KG	CYCLOHEXANE
18U	UG/KG	CARBON TETRACHLORIDE
18U	UG/KG	BENZENE
18U	UG/KG	1,2-DICHLOROETHANE
18U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
18U	UG/KG	METHYLCYCLOHEXANE
18U	UG/KG	1,2-DICHLOROPROPANE
18U	UG/KG	BROMODICHLOROMETHANE
18U	UG/KG	CIS-1,3-DICHLOROPROPENE
18UJ	UG/KG	METHYL ISOBUTYL KETONE
18U	UG/KG	TOLUENE
18U	UG/KG	TRANS-1,3-DICHLOROPROPENE
18U	UG/KG	1,1,2-TRICHLOROETHANE
18U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
18UJ	UG/KG	METHYL BUTYL KETONE
18U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
18U	UG/KG	1,2-DIBROMOETHANE (EDB)
18U	UG/KG	CHLOROBENZENE
18U	UG/KG	ETHYL BENZENE
18U	UG/KG	TOTAL XYLENES
18U	UG/KG	STYRENE
18U	UG/KG	BROMOFORM
18U	UG/KG	ISOPROPYLBENZENE
18U	UG/KG	1,1,2,2-TETRACHLOROETHANE
18UJ	UG/KG	1,3-DICHLOROBENZENE
18U	UG/KG	1,4-DICHLOROBENZENE
18UJ	UG/KG	1,2-DICHLOROBENZENE
18U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
18UJ	UG/KG	1,2,4-TRICHLOROBENZENE
43	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4809 FY 2001 Project: 01-0528

Produced by: McConney, John

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF <sup>Actually</sup> Case No: 29099Beginning: 04/03/2001 12:30 → LC-06-SD ~~MA~~Id/Station: LC08SD7 <sup>See Logbook 1, pp 24-26</sup> MD No: 0J71

Ending:

Media: SEDIMENT D No: 0J71

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
31UJ	UG/KG	DICHLORODIFLUOROMETHANE
31UJ	UG/KG	CHLOROMETHANE
31U	UG/KG	VINYL CHLORIDE
31U	UG/KG	BROMOMETHANE
31U	UG/KG	CHLOROETHANE
31UJ	UG/KG	TRICHLOROFLUOROMETHANE
31U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
31U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
62J	UG/KG	ACETONE
31U	UG/KG	CARBON DISULFIDE
31UJ	UG/KG	METHYL ACETATE
39UJ	UG/KG	METHYLENE CHLORIDE
31U	UG/KG	TRANS-1,2-DICHLOROETHENE
31UJ	UG/KG	METHYL T-BUTYL ETHER (MTBE)
31U	UG/KG	1,1-DICHLOROETHANE
31U	UG/KG	CIS-1,2-DICHLOROETHENE
31UJ	UG/KG	METHYL ETHYL KETONE
31U	UG/KG	CHLOROFORM
31U	UG/KG	1,1,1-TRICHLOROETHANE
31U	UG/KG	CYCLOHEXANE
31U	UG/KG	CARBON TETRACHLORIDE
31U	UG/KG	BENZENE
31U	UG/KG	1,2-DICHLOROETHANE
31U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
31U	UG/KG	METHYLCYCLOHEXANE
31U	UG/KG	1,2-DICHLOROPROPANE
31U	UG/KG	BROMODICHLOROMETHANE
31U	UG/KG	CIS-1,3-DICHLOROPROPENE
31UJ	UG/KG	METHYL ISOBUTYL KETONE
31U	UG/KG	TOLUENE
31U	UG/KG	TRANS-1,3-DICHLOROPROPENE
31U	UG/KG	1,1,2-TRICHLOROETHANE
31U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
31UJ	UG/KG	METHYL BUTYL KETONE
31U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
31U	UG/KG	1,2-DIBROMOETHANE (EDB)
31U	UG/KG	CHLOROBENZENE
31U	UG/KG	ETHYL BENZENE
31U	UG/KG	TOTAL XYLENES
31U	UG/KG	STYRENE
31U	UG/KG	BROMOFORM
31U	UG/KG	ISOPROPYLBENZENE
31U	UG/KG	1,1,2,2-TETRACHLOROETHANE
31UJ	UG/KG	1,3-DICHLOROBENZENE
31U	UG/KG	1,4-DICHLOROBENZENE
31UJ	UG/KG	1,2-DICHLOROBENZENE
31UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
31UJ	UG/KG	1,2,4-TRICHLOROBENZENE
68	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4815 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC05SD / MD No: 0J77

Media: SEDIMENT D No: 0J77

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
25UJ	UG/KG	DICHLORODIFLUOROMETHANE	25U	UG/KG	1,2-DIBROMOETHANE (EDB)
25UJ	UG/KG	CHLOROMETHANE	25U	UG/KG	CHLOROBENZENE
25U	UG/KG	VINYL CHLORIDE	25U	UG/KG	ETHYL BENZENE
25U	UG/KG	BROMOMETHANE	25U	UG/KG	TOTAL XYLENES
25U	UG/KG	CHLOROETHANE	25U	UG/KG	STYRENE
25U	UG/KG	TRICHLOROFLUOROMETHANE	25U	UG/KG	BROMOFORM
25U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	25U	UG/KG	ISOPROPYLBENZENE
25UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	25U	UG/KG	1,1,2,2-TETRACHLOROETHANE
71J	UG/KG	ACETONE	25U	UG/KG	1,3-DICHLOROBENZENE
18J	UG/KG	CARBON DISULFIDE	25U	UG/KG	1,4-DICHLOROBENZENE
25U	UG/KG	METHYL ACETATE	25U	UG/KG	1,2-DICHLOROBENZENE
69U	UG/KG	METHYLENE CHLORIDE	25UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
25U	UG/KG	TRANS-1,2-DICHLOROETHENE	25U	UG/KG	1,2,4-TRICHLOROBENZENE
25U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	58	%	% MOISTURE
25U	UG/KG	1,1-DICHLOROETHANE			
25U	UG/KG	CIS-1,2-DICHLOROETHENE			
25U	UG/KG	METHYL ETHYL KETONE			
25U	UG/KG	CHLOROFORM			
25U	UG/KG	1,1,1-TRICHLOROETHANE			
25U	UG/KG	CYCLOHEXANE			
25UJ	UG/KG	CARBON TETRACHLORIDE			
25U	UG/KG	BENZENE			
25U	UG/KG	1,2-DICHLOROETHANE			
25U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
25UJ	UG/KG	METHYLCYCLOHEXANE			
25U	UG/KG	1,2-DICHLOROPROPANE			
25U	UG/KG	BROMODICHLOROMETHANE			
25U	UG/KG	CIS-1,3-DICHLOROPROPENE			
25U	UG/KG	METHYL ISOBUTYL KETONE			
25U	UG/KG	TOLUENE			
25U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
25U	UG/KG	1,1,2-TRICHLOROETHANE			
25U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
25U	UG/KG	METHYL BUTYL KETONE			
25U	UG/KG	DIBROMOCHLOROMETHANE			

Sample 4797 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC04SD / MD No: 0J59

Media: SEDIMENT D No: 0J59

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 18:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
16UJ	UG/KG	DICHLORODIFLUOROMETHANE
16UJ	UG/KG	CHLOROMETHANE
16U	UG/KG	VINYL CHLORIDE
16U	UG/KG	BROMOMETHANE
16U	UG/KG	CHLOROETHANE
16U	UG/KG	TRICHLOROFLUOROMETHANE
16U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
16UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
16U	UG/KG	ACETONE
16U	UG/KG	CARBON DISULFIDE
16U	UG/KG	METHYL ACETATE
23U	UG/KG	METHYLENE CHLORIDE
16U	UG/KG	TRANS-1,2-DICHLOROETHENE
16U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
16U	UG/KG	1,1-DICHLOROETHANE
16U	UG/KG	CIS-1,2-DICHLOROETHENE
16U	UG/KG	METHYL ETHYL KETONE
16U	UG/KG	CHLOROFORM
16U	UG/KG	1,1,1-TRICHLOROETHANE
16U	UG/KG	CYCLOHEXANE
16UJ	UG/KG	CARBON TETRACHLORIDE
16U	UG/KG	BENZENE
16U	UG/KG	1,2-DICHLOROETHANE
16U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
16UJ	UG/KG	METHYLCYCLOHEXANE
16U	UG/KG	1,2-DICHLOROPROPANE
16U	UG/KG	BROMODICHLOROMETHANE
16U	UG/KG	CIS-1,3-DICHLOROPROPENE
16U	UG/KG	METHYL ISOBUTYL KETONE
16U	UG/KG	TOLUENE
16U	UG/KG	TRANS-1,3-DICHLOROPROPENE
16U	UG/KG	1,1,2-TRICHLOROETHANE
16U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
16U	UG/KG	METHYL BUTYL KETONE
16U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
16U	UG/KG	1,2-DIBROMOETHANE (EDB)
16U	UG/KG	CHLOROBENZENE
16U	UG/KG	ETHYL BENZENE
16U	UG/KG	TOTAL XYLENES
16U	UG/KG	STYRENE
16U	UG/KG	BROMOFORM
16U	UG/KG	ISOPROPYLBENZENE
16U	UG/KG	1,1,2,2-TETRACHLOROETHANE
16U	UG/KG	1,3-DICHLOROBENZENE
16U	UG/KG	1,4-DICHLOROBENZENE
16U	UG/KG	1,2-DICHLOROBENZENE
16UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
16U	UG/KG	1,2,4-TRICHLOROBENZENE
39	%	% MOISTURE

1-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4798 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SD /

MD No: 0J60

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J60

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
24UJ	UG/KG	DICHLORODIFLUOROMETHANE
24UJ	UG/KG	CHLOROMETHANE
24U	UG/KG	VINYL CHLORIDE
24U	UG/KG	BROMOMETHANE
24U	UG/KG	CHLOROETHANE
24U	UG/KG	TRICHLOROFLUOROMETHANE
24U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
24UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
24U	UG/KG	ACETONE
24U	UG/KG	CARBON DISULFIDE
24U	UG/KG	METHYL ACETATE
32U	UG/KG	METHYLENE CHLORIDE
24U	UG/KG	TRANS-1,2-DICHLOROETHENE
24U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
24U	UG/KG	1,1-DICHLOROETHANE
24U	UG/KG	CIS-1,2-DICHLOROETHENE
24U	UG/KG	METHYL ETHYL KETONE
24U	UG/KG	CHLOROFORM
24U	UG/KG	1,1,1-TRICHLOROETHANE
24U	UG/KG	CYCLOHEXANE
24UJ	UG/KG	CARBON TETRACHLORIDE
24U	UG/KG	BENZENE
24U	UG/KG	1,2-DICHLOROETHANE
24U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
24UJ	UG/KG	METHYLCYCLOHEXANE
24U	UG/KG	1,2-DICHLOROPROPANE
24U	UG/KG	BROMODICHLOROMETHANE
24U	UG/KG	CIS-1,3-DICHLOROPROPENE
24U	UG/KG	METHYL ISOBUTYL KETONE
24U	UG/KG	TOLUENE
24U	UG/KG	TRANS-1,3-DICHLOROPROPENE
24U	UG/KG	1,1,2-TRICHLOROETHANE
24U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
24U	UG/KG	METHYL BUTYL KETONE
24U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
24U	UG/KG	1,2-DIBROMOETHANE (EDB)
24U	UG/KG	CHLOROBENZENE
24U	UG/KG	ETHYL BENZENE
24U	UG/KG	TOTAL XYLENES
24U	UG/KG	STYRENE
24U	UG/KG	BROMOFORM
24U	UG/KG	ISOPROPYLBENZENE
24U	UG/KG	1,1,2,2-TETRACHLOROETHANE
24U	UG/KG	1,3-DICHLOROBENZENE
24U	UG/KG	1,4-DICHLOROBENZENE
24U	UG/KG	1,2-DICHLOROBENZENE
24UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
24U	UG/KG	1,2,4-TRICHLOROBENZENE
59	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4799 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC02SD / MD No: 0J61

Media: SEDIMENT D No: 0J61

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:30

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
14UJ	UG/KG	DICHLORODIFLUOROMETHANE	14U	UG/KG	1,2-DIBROMOETHANE (EDB)
14UJ	UG/KG	CHLOROMETHANE	14U	UG/KG	CHLOROBENZENE
14U	UG/KG	VINYL CHLORIDE	14U	UG/KG	ETHYL BENZENE
14U	UG/KG	BROMOMETHANE	14U	UG/KG	TOTAL XYLENES
14U	UG/KG	CHLOROETHANE	14U	UG/KG	STYRENE
14U	UG/KG	TRICHLOROFLUOROMETHANE	14U	UG/KG	BROMOFORM
14U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	14U	UG/KG	ISOPROPYLBENZENE
14UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	14U	UG/KG	1,1,2,2-TETRACHLOROETHANE
17J	UG/KG	ACETONE	14U	UG/KG	1,3-DICHLOROBENZENE
14U	UG/KG	CARBON DISULFIDE	14U	UG/KG	1,4-DICHLOROBENZENE
14U	UG/KG	METHYL ACETATE	14U	UG/KG	1,2-DICHLOROBENZENE
19U	UG/KG	METHYLENE CHLORIDE	14UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
14U	UG/KG	TRANS-1,2-DICHLOROETHENE	14U	UG/KG	1,2,4-TRICHLOROBENZENE
14U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	32	%	% MOISTURE
14U	UG/KG	1,1-DICHLOROETHANE			
14U	UG/KG	CIS-1,2-DICHLOROETHENE			
14U	UG/KG	METHYL ETHYL KETONE			
14U	UG/KG	CHLOROFORM			
14U	UG/KG	1,1,1-TRICHLOROETHANE			
14U	UG/KG	CYCLOHEXANE			
14UJ	UG/KG	CARBON TETRACHLORIDE			
14U	UG/KG	BENZENE			
14U	UG/KG	1,2-DICHLOROETHANE			
14U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
14UJ	UG/KG	METHYLCYCLOHEXANE			
14U	UG/KG	1,2-DICHLOROPROPANE			
14U	UG/KG	BROMODICHLOROMETHANE			
14U	UG/KG	CIS-1,3-DICHLOROPROPENE			
14U	UG/KG	METHYL ISOBUTYL KETONE			
14U	UG/KG	TOLUENE			
14U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
14U	UG/KG	1,1,2-TRICHLOROETHANE			
14U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
14U	UG/KG	METHYL BUTYL KETONE			
14U	UG/KG	DIBROMOCHLOROMETHANE			

Sample 4818 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01SD /

MD No: 0J80

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J80

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
18UJ	UG/KG	DICHLORODIFLUOROMETHANE
18UJ	UG/KG	CHLOROMETHANE
18U	UG/KG	VINYL CHLORIDE
18U	UG/KG	BROMOMETHANE
18U	UG/KG	CHLOROETHANE
18UJ	UG/KG	TRICHLOROFLUOROMETHANE
18U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
18U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
18UJ	UG/KG	ACETONE
18UJ	UG/KG	CARBON DISULFIDE
18UJ	UG/KG	METHYL ACETATE
20UJ	UG/KG	METHYLENE CHLORIDE
18U	UG/KG	TRANS-1,2-DICHLOROETHENE
18UJ	UG/KG	METHYL T-BUTYL ETHER (MTBE)
18U	UG/KG	1,1-DICHLOROETHANE
18U	UG/KG	CIS-1,2-DICHLOROETHENE
18UJ	UG/KG	METHYL ETHYL KETONE
18U	UG/KG	CHLOROFORM
18U	UG/KG	1,1,1-TRICHLOROETHANE
18U	UG/KG	CYCLOHEXANE
18U	UG/KG	CARBON TETRACHLORIDE
18U	UG/KG	BENZENE
18U	UG/KG	1,2-DICHLOROETHANE
18U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
18U	UG/KG	METHYLCYCLOHEXANE
18U	UG/KG	1,2-DICHLOROPROPANE
18U	UG/KG	BROMODICHLOROMETHANE
18U	UG/KG	CIS-1,3-DICHLOROPROPENE
18UJ	UG/KG	METHYL ISOBUTYL KETONE
18U	UG/KG	TOLUENE
18U	UG/KG	TRANS-1,3-DICHLOROPROPENE
18U	UG/KG	1,1,2-TRICHLOROETHANE
18U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
18UJ	UG/KG	METHYL BUTYL KETONE
18U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
18UJ	UG/KG	1,2-DIBROMOETHANE (EDB)
18U	UG/KG	CHLOROBENZENE
18U	UG/KG	ETHYL BENZENE
18U	UG/KG	TOTAL XYLENES
18U	UG/KG	STYRENE
18U	UG/KG	BROMOFORM
18U	UG/KG	ISOPROPYLBENZENE
18U	UG/KG	1,1,2,2-TETRACHLOROETHANE
18UJ	UG/KG	1,3-DICHLOROBENZENE
18U	UG/KG	1,4-DICHLOROBENZENE
18UJ	UG/KG	1,2-DICHLOROBENZENE
18UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
18UJ	UG/KG	1,2,4-TRICHLOROBENZENE
41	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4494 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC09SW /

Media: SURFACE WATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 13:00

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	THUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4492 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC08SW /

Media: SURFACE WATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:05

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.0	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.0	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4543 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC05SW /

Media: SURFACE WATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4547 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Id/Station: LC04SW /

Media: SURFACE WATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:20

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
1.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	5.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	1.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4548 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC03SW /

Media: SURFACE WATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:45

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	THUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4546 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC02SW /

Media: SURFACE WATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:30

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4550 FY 2001 Project: 01-0529

Produced by: Allen, Frank

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Beginning: 04/03/2001 17:15

Id/Station: LC01ASW /

Ending:

Media: SURFACE WATER

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4549 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Id/Station: LCC01SW /

Media: SURFACE WATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4364 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Id/Station: LC02MW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4365 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC01MW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:40

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value, NA-not analyzed, NAI-interferences, J-estimated value, N-presumptive evidence of presence of material.

K-actual value is known to be less than value given, L-actual value is known to be greater than value given, U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable, compound may or may not be present, resampling and reanalysis is necessary for verification.

Sample 4491 FY 2001 Project: 01-0529

Produced by: Allen, Frank

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF

Beginning: 04/02/2001 09:55

Id/Station: LC09GW /

Ending:

Media: GROUNDWATER

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
2.2	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	0.87J	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4490 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC07GW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
1.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	5.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	1.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4544 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Id/Station: LC06GW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:35

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
4.4	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	0.98J	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4545 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Id/Station: LC04GW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 14:01

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
5.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	1.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	5.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4552 FY 2001 Project: 01-0529

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC03GW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/04/2001 12:10

Ending:

RESULTS	UNITS	ANALYTE
N	UG/L	PETROLEUM PRODUCT

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4552 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC03GW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/04/2001 12:10

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
0.55J	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
1.0U	UG/L	METHYL ACETATE	0.50J	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	7.6	UG/L	ISOPROPYLBENZENE
2.0	UG/L	CYCLOHEXANE	13.	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	0.89J	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	3.9	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
3.0	UG/L	METHYLCYCLOHEXANE	3.8	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	5.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	1.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4489 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Id/Station: LC02GW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
1.0U	UG/L	METHYL T-BUTYL ETHER (MTBE)	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.U	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
1.0U	UG/L	METHYL ACETATE	1.0U	UG/L	O-XYLENE
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.U	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	1.0U	UG/L	ISOPROPYLBENZENE
1.0U	UG/L	CYCLOHEXANE	1.0U	UG/L	N-PROPYLBENZENE
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	1.0U	UG/L	TERT-BUTYLBENZENE
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	1.0U	UG/L	SEC-BUTYLBENZENE
1.0U	UG/L	1,2-DICHLOROPROPANE	1.0U	UG/L	P-ISOPROPYLTOLUENE
1.0U	UG/L	METHYLCYCLOHEXANE	1.0U	UG/L	N-BUTYLBENZENE
1.0U	UG/L	DIBROMOMETHANE	5.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	BENZENE	1.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	DIBROMOCHLOROMETHANE			
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4551 FY 2001 Project: 01-0529

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC01GW /

Media: GROUNDWATER

Produced by: Allen, Frank

Requestor:

Project Leader: CKING

Beginning: 04/04/2001 11:25

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
1.0U	UG/L	DICHLORODIFLUOROMETHANE	1.0U	UG/L	CIS-1,3-DICHLOROPROPENE
1.0U	UG/L	CHLOROMETHANE	1.0U	UG/L	BROMOFORM
1.0U	UG/L	BROMOMETHANE	1.0U	UG/L	BROMOBENZENE
1.0U	UG/L	VINYL CHLORIDE	1.0U	UG/L	1,1,2,2-TETRACHLOROETHANE
1.0U	UG/L	CHLOROETHANE	1.0U	UG/L	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
1.0U	UG/L	TRICHLOROFLUOROMETHANE	1.0U	UG/L	1,3-DICHLOROPROPANE
1.0U	UG/L	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	2.5U	UG/L	METHYL BUTYL KETONE
1.0U	UG/L	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	1.0U	UG/L	TOLUENE
5.0U	UG/L	METHYLENE CHLORIDE	1.0U	UG/L	CHLOROBENZENE
<del>1.0U</del>	<del>UG/L</del>	<del>METHYL T-BUTYL ETHER (MTBE)</del>	1.0U	UG/L	1,1,1,2-TETRACHLOROETHANE
25.0	UG/L	ACETONE	1.0U	UG/L	ETHYL BENZENE
2.5U	UG/L	CARBON DISULFIDE	1.0U	UG/L	(M- AND/OR P-)XYLENE
1.0U	UG/L	METHYL ACETATE	<del>1.0U</del>	<del>UG/L</del>	<del>O-XYLENE</del>
1.0U	UG/L	1,1-DICHLOROETHANE	1.0U	UG/L	STYRENE
1.0U	UG/L	CIS-1,2-DICHLOROETHENE	1.0U	UG/L	1,2,3-TRICHLOROPROPANE
1.0U	UG/L	2,2-DICHLOROPROPANE	1.0U	UG/L	O-CHLOROTOLUENE
25.0	UG/L	METHYL ETHYL KETONE	1.0U	UG/L	P-CHLOROTOLUENE
1.0U	UG/L	BROMOCHLOROMETHANE	1.0U	UG/L	1,3-DICHLOROBENZENE
1.0U	UG/L	TRANS-1,2-DICHLOROETHENE	1.0U	UG/L	1,4-DICHLOROBENZENE
1.0U	UG/L	CHLOROFORM	1.0U	UG/L	1,2-DICHLOROBENZENE
1.0U	UG/L	1,2-DICHLOROETHANE	1.0U	UG/L	1,2-DIBROMOETHANE (EDB)
1.0U	UG/L	1,1,1-TRICHLOROETHANE	<del>1.0U</del>	<del>UG/L</del>	<del>1,2,3-TRICHLOROPROPANE</del>
<del>1.0U</del>	<del>UG/L</del>	<del>1,1,1-TRICHLOROETHANE</del>	<del>1.0U</del>	<del>UG/L</del>	<del>1,2,3-TRICHLOROPROPANE</del>
1.0U	UG/L	1,1-DICHLOROPROPENE	1.0U	UG/L	1,3,5-TRIMETHYLBENZENE
1.0U	UG/L	CARBON TETRACHLORIDE	<del>1.0U</del>	<del>UG/L</del>	<del>1,3,5-TRIMETHYLBENZENE</del>
1.0U	UG/L	BROMODICHLOROMETHANE	1.0U	UG/L	1,2,4-TRIMETHYLBENZENE
2.5U	UG/L	METHYL ISOBUTYL KETONE	<del>1.0U</del>	<del>UG/L</del>	<del>1,2,4-TRIMETHYLBENZENE</del>
1.0U	UG/L	1,2-DICHLOROPROPANE	<del>1.0U</del>	<del>UG/L</del>	<del>1,2,4-TRIMETHYLBENZENE</del>
<del>1.0U</del>	<del>UG/L</del>	<del>METHYL CYCLOHEXANE</del>	<del>1.0U</del>	<del>UG/L</del>	<del>1,2,4-TRIMETHYLBENZENE</del>
1.0U	UG/L	DIBROMOMETHANE	<del>1.0U</del>	<del>UG/L</del>	<del>N-BUTYLBENZENE</del>
1.0U	UG/L	TRANS-1,3-DICHLOROPROPENE	5.0U	UG/L	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
1.0U	UG/L	TRICHLOROETHENE (TRICHLOROETHYLENE)	1.0U	UG/L	1,2,4-TRICHLOROBENZENE
1.0U	UG/L	BENZENE	1.0U	UG/L	HEXACHLORO-1,3-BUTADIENE
1.0U	UG/L	DIBROMOCHLOROMETHANE	1.0U	UG/L	1,2,3-TRICHLOROBENZENE
1.0U	UG/L	1,1,2-TRICHLOROETHANE			

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4779 FY 2001 Project: 01-0528

Produced by: McConney, John

VOLATILES SCAN

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF Case No: 29099

Beginning: 03/30/2001 12:00

Id/Station: LC09SB / MD No: 0J41

Ending:

Media: SUBSURFACE SOIL (> 12") D No: 0J41

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
14UJ	UG/KG	DICHLORODIFLUOROMETHANE	14U	UG/KG	1,2-DIBROMOETHANE (EDB)
14UJ	UG/KG	CHLOROMETHANE	14U	UG/KG	CHLOROBENZENE
14U	UG/KG	VINYL CHLORIDE	14U	UG/KG	ETHYL BENZENE
14U	UG/KG	BROMOMETHANE	14U	UG/KG	TOTAL XYLENES
14U	UG/KG	CHLOROETHANE	14U	UG/KG	STYRENE
14U	UG/KG	TRICHLOROFLUOROMETHANE	14U	UG/KG	BROMOFORM
14U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	14U	UG/KG	ISOPROPYLBENZENE
14UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	14U	UG/KG	1,1,2,2-TETRACHLOROETHANE
21J	UG/KG	ACETONE	14U	UG/KG	1,3-DICHLOROBENZENE
14U	UG/KG	CARBON DISULFIDE	14U	UG/KG	1,4-DICHLOROBENZENE
14U	UG/KG	METHYL ACETATE	14U	UG/KG	1,2-DICHLOROBENZENE
19U	UG/KG	METHYLENE CHLORIDE	14UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
14U	UG/KG	TRANS-1,2-DICHLOROETHENE	14U	UG/KG	1,2,4-TRICHLOROBENZENE
14U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	18	%	% MOISTURE
14U	UG/KG	1,1-DICHLOROETHANE			
14U	UG/KG	CIS-1,2-DICHLOROETHENE			
14U	UG/KG	METHYL ETHYL KETONE			
14U	UG/KG	CHLOROFORM			
14U	UG/KG	1,1,1-TRICHLOROETHANE			
14U	UG/KG	CYCLOHEXANE			
14UJ	UG/KG	CARBON TETRACHLORIDE			
14U	UG/KG	BENZENE			
14U	UG/KG	1,2-DICHLOROETHANE			
14U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
14UJ	UG/KG	METHYLCYCLOHEXANE			
14U	UG/KG	1,2-DICHLOROPROPANE			
14U	UG/KG	BROMODICHLOROMETHANE			
14U	UG/KG	CIS-1,3-DICHLOROPROPENE			
14U	UG/KG	METHYL ISOBUTYL KETONE			
14U	UG/KG	TOLUENE			
14U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
14U	UG/KG	1,1,2-TRICHLOROETHANE			
14U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
14U	UG/KG	METHYL BUTYL KETONE			
14U	UG/KG	DIBROMOCHLOROMETHANE			

Sample	4804	FY 2001	Project: 01-0528	Produced by: McConney, John
MISCELLANEOUS COMPOUNDS				Requestor:
Facility:	Latex Construction Co	Thunderbolt, GA	Case No: 29099	Project Leader: CKING
Program:	SF		MD No: 0J66	Beginning: 04/03/2001 10:20
Id/Station:	LC08SB /		Inorg Contractor: SENTIN	Ending:
Media:	SUBSURFACE SOIL (> 12")		D No: 0J66	Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
220J	UG/KG	2 UNKNOWN SILOXANES

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

Sample 4804 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC08SB / MD No: 0J66  
Media: SUBSURFACE SOIL (> 12") D No: 0J66

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/03/2001 10:20  
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
12UJ	UG/KG	DICHLORODIFLUOROMETHANE
12UJ	UG/KG	CHLOROMETHANE
12U	UG/KG	VINYL CHLORIDE
12U	UG/KG	BROMOMETHANE
12U	UG/KG	CHLOROETHANE
12U	UG/KG	TRICHLOROFLUOROMETHANE
12U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
12UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
12U	UG/KG	ACETONE
12U	UG/KG	CARBON DISULFIDE
12U	UG/KG	METHYL ACETATE
26U	UG/KG	METHYLENE CHLORIDE
12U	UG/KG	TRANS-1,2-DICHLOROETHENE
12U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
12U	UG/KG	1,1-DICHLOROETHANE
12U	UG/KG	CIS-1,2-DICHLOROETHENE
12U	UG/KG	METHYL ETHYL KETONE
12U	UG/KG	CHLOROFORM
12U	UG/KG	1,1,1-TRICHLOROETHANE
12U	UG/KG	CYCLOHEXANE
12UJ	UG/KG	CARBON TETRACHLORIDE
12U	UG/KG	BENZENE
12U	UG/KG	1,2-DICHLOROETHANE
12U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
12UJ	UG/KG	METHYLCYCLOHEXANE
12U	UG/KG	1,2-DICHLOROPROPANE
12U	UG/KG	BROMODICHLOROMETHANE
12U	UG/KG	CIS-1,3-DICHLOROPROPENE
12U	UG/KG	METHYL ISOBUTYL KETONE
12U	UG/KG	TOLUENE
12U	UG/KG	TRANS-1,3-DICHLOROPROPENE
12U	UG/KG	1,1,2-TRICHLOROETHANE
12U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
12U	UG/KG	METHYL BUTYL KETONE
12U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
12U	UG/KG	1,2-DIBROMOETHANE (EDB)
12U	UG/KG	CHLOROBENZENE
12U	UG/KG	ETHYL BENZENE
12U	UG/KG	TOTAL XYLENES
12U	UG/KG	STYRENE
12U	UG/KG	BROMOFORM
12U	UG/KG	ISOPROPYLBENZENE
12U	UG/KG	1,1,2,2-TETRACHLOROETHANE
12U	UG/KG	1,3-DICHLOROBENZENE
12U	UG/KG	1,4-DICHLOROBENZENE
12U	UG/KG	1,2-DICHLOROBENZENE
12UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
12U	UG/KG	1,2,4-TRICHLOROBENZENE
10	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4796 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SB /

MD No: 0J58

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J58

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:05

Ending:

RESULTS	UNITS	ANALYTE
380J	UG/KG	2 UNKNOWN SILOXANES

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4796 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC07SB / MD No: 0J58  
Media: SUBSURFACE SOIL (> 12") D No: 0J58

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/02/2001 17:05  
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE
10UJ	UG/KG	CHLOROMETHANE
10U	UG/KG	VINYL CHLORIDE
10U	UG/KG	BROMOMETHANE
10U	UG/KG	CHLOROETHANE
10UJ	UG/KG	TRICHLOROFLUOROMETHANE
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
10U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
10UJ	UG/KG	ACETONE
10U	UG/KG	CARBON DISULFIDE
10UJ	UG/KG	METHYL ACETATE
26UJ	UG/KG	METHYLENE CHLORIDE
10U	UG/KG	TRANS-1,2-DICHLOROETHENE
10UJ	UG/KG	METHYL T-BUTYL ETHER (MTBE)
10U	UG/KG	1,1-DICHLOROETHANE
10U	UG/KG	CIS-1,2-DICHLOROETHENE
10UJ	UG/KG	METHYL ETHYL KETONE
10U	UG/KG	CHLOROFORM
10U	UG/KG	1,1,1-TRICHLOROETHANE
10U	UG/KG	CYCLOHEXANE
10U	UG/KG	CARBON TETRACHLORIDE
10U	UG/KG	BENZENE
10U	UG/KG	1,2-DICHLOROETHANE
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
10U	UG/KG	METHYLCYCLOHEXANE
10U	UG/KG	1,2-DICHLOROPROPANE
10U	UG/KG	BROMODICHLOROMETHANE
10U	UG/KG	CIS-1,3-DICHLOROPROPENE
10UJ	UG/KG	METHYL ISOBUTYL KETONE
10U	UG/KG	TOLUENE
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE
10U	UG/KG	1,1,2-TRICHLOROETHANE
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
10UJ	UG/KG	METHYL BUTYL KETONE
10U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	1,2-DIBROMOETHANE (EDB)
10U	UG/KG	CHLOROBENZENE
10U	UG/KG	ETHYL BENZENE
10U	UG/KG	TOTAL XYLENES
10U	UG/KG	STYRENE
10U	UG/KG	BROMOFORM
10U	UG/KG	ISOPROPYLBENZENE
10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10UJ	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	1,4-DICHLOROBENZENE
10UJ	UG/KG	1,2-DICHLOROBENZENE
10UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10UJ	UG/KG	1,2,4-TRICHLOROBENZENE
8	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4791 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC06SB / MD No: 0J53

Media: SUBSURFACE SOIL (> 12") D.No: 0J53

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 12:25

Ending:

RESULTS	UNITS	ANALYTE
250J	UG/KG	2 UNKNOWN SILOXANES

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

Sample 4791 FY 2001 Project: 01-0528

Produced by: McConney, John

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 12:25

Id/Station: LC06SB /

MD No: 0J53

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J53

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE
10UJ	UG/KG	CHLOROMETHANE
10UJ	UG/KG	VINYL CHLORIDE
10UJ	UG/KG	BROMOMETHANE
10U	UG/KG	CHLOROETHANE
10UJ	UG/KG	TRICHLOROFLUOROMETHANE
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
10U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
10U	UG/KG	ACETONE
10U	UG/KG	CARBON DISULFIDE
10U	UG/KG	METHYL ACETATE
23UJ	UG/KG	METHYLENE CHLORIDE
10U	UG/KG	TRANS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
10U	UG/KG	1,1-DICHLOROETHANE
10U	UG/KG	CIS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL ETHYL KETONE
10U	UG/KG	CHLOROFORM
10U	UG/KG	1,1,1-TRICHLOROETHANE
10U	UG/KG	CYCLOHEXANE
10U	UG/KG	CARBON TETRACHLORIDE
10U	UG/KG	BENZENE
10U	UG/KG	1,2-DICHLOROETHANE
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
10U	UG/KG	METHYLCYCLOHEXANE
10U	UG/KG	1,2-DICHLOROPROPANE
10U	UG/KG	BROMODICHLOROMETHANE
10U	UG/KG	CIS-1,3-DICHLOROPROPENE
10U	UG/KG	METHYL ISOBUTYL KETONE
10U	UG/KG	TOLUENE
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE
10U	UG/KG	1,1,2-TRICHLOROETHANE
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
10U	UG/KG	METHYL BUTYL KETONE
10U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10U	UG/KG	CHLOROBENZENE
10U	UG/KG	ETHYL BENZENE
10U	UG/KG	TOTAL XYLENES
10U	UG/KG	STYRENE
10U	UG/KG	BROMOFORM
10U	UG/KG	ISOPROPYLBENZENE
10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	1,2-DICHLOROBENZENE
10U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	1,2,4-TRICHLOROBENZENE
8	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4789 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC05SB / MD No: 0J51

Media: SUBSURFACE SOIL (> 12") D No: 0J51

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

RESULTS	UNITS	ANALYTE
400J	UG/KG	3 UNKNOWN SILOXANES

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4789 FY 2001 Project: 01-0528

Produced by: McConney, John

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 11:05

Id/Station: LC05SB /

MD No: 0J51

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J51

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE
10UJ	UG/KG	CHLOROMETHANE
10UJ	UG/KG	VINYL CHLORIDE
10UJ	UG/KG	BROMOMETHANE
10U	UG/KG	CHLOROETHANE
10UJ	UG/KG	TRICHLOROFLUOROMETHANE
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
10U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
10U	UG/KG	ACETONE
10U	UG/KG	CARBON DISULFIDE
10U	UG/KG	METHYL ACETATE
20UJ	UG/KG	METHYLENE CHLORIDE
10U	UG/KG	TRANS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
10U	UG/KG	1,1-DICHLOROETHANE
10U	UG/KG	CIS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL ETHYL KETONE
10U	UG/KG	CHLOROFORM
10U	UG/KG	1,1,1-TRICHLOROETHANE
10U	UG/KG	CYCLOHEXANE
10U	UG/KG	CARBON TETRACHLORIDE
10U	UG/KG	BENZENE
10U	UG/KG	1,2-DICHLOROETHANE
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
10U	UG/KG	METHYLCYCLOHEXANE
10U	UG/KG	1,2-DICHLOROPROPANE
10U	UG/KG	BROMODICHLOROMETHANE
10U	UG/KG	CIS-1,3-DICHLOROPROPENE
10U	UG/KG	METHYL ISOBUTYL KETONE
10U	UG/KG	TOLUENE
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE
10U	UG/KG	1,1,2-TRICHLOROETHANE
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
10U	UG/KG	METHYL BUTYL KETONE
10U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10U	UG/KG	CHLOROBENZENE
10U	UG/KG	ETHYL BENZENE
10U	UG/KG	TOTAL XYLENES
10U	UG/KG	STYRENE
10U	UG/KG	BROMOFORM
10U	UG/KG	ISOPROPYLBENZENE
10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	1,2-DICHLOROBENZENE
10U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	1,2,4-TRICHLOROBENZENE
7	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4802 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC04SB / MD No: 0J64

Media: SUBSURFACE SOIL (> 12") D No: 0J64 Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:40

Ending:

RESULTS	UNITS	ANALYTE
460J	UG/KG	2 UNKNOWN SILOXANES

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4802 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC04SB / MD No: 0J64  
Media: SUBSURFACE SOIL (> 12") D No: 0J64

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/03/2001 09:40  
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE
10UJ	UG/KG	CHLOROMETHANE
10U	UG/KG	VINYL CHLORIDE
10U	UG/KG	BROMOMETHANE
10U	UG/KG	CHLOROETHANE
10U	UG/KG	TRICHLOROFLUOROMETHANE
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
10UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
10U	UG/KG	ACETONE
10U	UG/KG	CARBON DISULFIDE
10U	UG/KG	METHYL ACETATE
19U	UG/KG	METHYLENE CHLORIDE
10U	UG/KG	TRANS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
10U	UG/KG	1,1-DICHLOROETHANE
10U	UG/KG	CIS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL ETHYL KETONE
10U	UG/KG	CHLOROFORM
10U	UG/KG	1,1,1-TRICHLOROETHANE
10U	UG/KG	CYCLOHEXANE
10UJ	UG/KG	CARBON TETRACHLORIDE
10U	UG/KG	BENZENE
10U	UG/KG	1,2-DICHLOROETHANE
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
10UJ	UG/KG	METHYLCYCLOHEXANE
10U	UG/KG	1,2-DICHLOROPROPANE
10U	UG/KG	BROMODICHLOROMETHANE
10U	UG/KG	CIS-1,3-DICHLOROPROPENE
10U	UG/KG	METHYL ISOBUTYL KETONE
10U	UG/KG	TOLUENE
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE
10U	UG/KG	1,1,2-TRICHLOROETHANE
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
10U	UG/KG	METHYL BUTYL KETONE
10U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10U	UG/KG	CHLOROBENZENE
10U	UG/KG	ETHYL BENZENE
10U	UG/KG	TOTAL XYLENES
10U	UG/KG	STYRENE
10U	UG/KG	BROMOFORM
10U	UG/KG	ISOPROPYLBENZENE
10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	1,2-DICHLOROBENZENE
10UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	1,2,4-TRICHLOROBENZENE
5	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4781 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC03SB / MD No: 0J43  
Media: SUBSURFACE SOIL (> 12") D No: 0J43

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 03/30/2001 16:20  
Ending:

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
410J	UG/KG	2 UNKNOWN SILOXANES

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4781 FY 2001 Project: 01-0528

Produced by: McConney, John

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF Case No: 29099

Beginning: 03/30/2001 16:20

Id/Station: LC03SB / MD No: 0J43

Ending:

Media: SUBSURFACE SOIL (&gt; 12") D No: 0J43

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11UJ	UG/KG	DICHLORODIFLUOROMETHANE
11UJ	UG/KG	CHLOROMETHANE
11UJ	UG/KG	VINYL CHLORIDE
11UJ	UG/KG	BROMOMETHANE
11U	UG/KG	CHLOROETHANE
11UJ	UG/KG	TRICHLOROFLUOROMETHANE
11U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
11U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
11U	UG/KG	ACETONE
11U	UG/KG	CARBON DISULFIDE
11U	UG/KG	METHYL ACETATE
23UJ	UG/KG	METHYLENE CHLORIDE
11U	UG/KG	TRANS-1,2-DICHLOROETHENE
11U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
11U	UG/KG	1,1-DICHLOROETHANE
11U	UG/KG	CIS-1,2-DICHLOROETHENE
11U	UG/KG	METHYL ETHYL KETONE
11U	UG/KG	CHLOROFORM
11U	UG/KG	1,1,1-TRICHLOROETHANE
11U	UG/KG	CYCLOHEXANE
11U	UG/KG	CARBON TETRACHLORIDE
11U	UG/KG	BENZENE
11U	UG/KG	1,2-DICHLOROETHANE
11U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
11U	UG/KG	METHYLCYCLOHEXANE
11U	UG/KG	1,2-DICHLOROPROPANE
11U	UG/KG	BROMODICHLOROMETHANE
11U	UG/KG	CIS-1,3-DICHLOROPROPENE
11U	UG/KG	METHYL ISOBUTYL KETONE
11U	UG/KG	TOLUENE
11U	UG/KG	TRANS-1,3-DICHLOROPROPENE
11U	UG/KG	1,1,2-TRICHLOROETHANE
11U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
11U	UG/KG	METHYL BUTYL KETONE
11U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
11U	UG/KG	1,2-DIBROMOETHANE (EDB)
11U	UG/KG	CHLOROBENZENE
11U	UG/KG	ETHYL BENZENE
11U	UG/KG	TOTAL XYLENES
11U	UG/KG	STYRENE
11U	UG/KG	BROMOFORM
11U	UG/KG	ISOPROPYLBENZENE
11U	UG/KG	1,1,2,2-TETRACHLOROETHANE
11U	UG/KG	1,3-DICHLOROBENZENE
11U	UG/KG	1,4-DICHLOROBENZENE
11U	UG/KG	1,2-DICHLOROBENZENE
11U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
11U	UG/KG	1,2,4-TRICHLOROBENZENE
9	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4777 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC02SB / MD No: 0J39

Media: SUBSURFACE SOIL (> 12") D No: 0J39

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 12:05

Ending:

RESULTS	UNITS	ANALYTE
32J	UG/KG	UNKNOWN SILOXANE

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4777 FY 2001 Project: 01-0528

Produced by: McConney, John

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Programs: SF

Case No: 29099

Beginning: 03/30/2001 12:05

Id/Station: LC02SB /

MD No: 0J39

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J39

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE
10UJ	UG/KG	CHLOROMETHANE
10UJ	UG/KG	VINYL CHLORIDE
10UJ	UG/KG	BROMOMETHANE
10U	UG/KG	CHLOROETHANE
10UJ	UG/KG	TRICHLOROFLUOROMETHANE
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
10U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
10U	UG/KG	ACETONE
10U	UG/KG	CARBON DISULFIDE
10U	UG/KG	METHYL ACETATE
14UJ	UG/KG	METHYLENE CHLORIDE
10U	UG/KG	TRANS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
10U	UG/KG	1,1-DICHLOROETHANE
10U	UG/KG	CIS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL ETHYL KETONE
10U	UG/KG	CHLOROFORM
10U	UG/KG	1,1,1-TRICHLOROETHANE
10U	UG/KG	CYCLOHEXANE
10U	UG/KG	CARBON TETRACHLORIDE
10U	UG/KG	BENZENE
10U	UG/KG	1,2-DICHLOROETHANE
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
10U	UG/KG	METHYLCYCLOHEXANE
10U	UG/KG	1,2-DICHLOROPROPANE
10U	UG/KG	BROMODICHLOROMETHANE
10U	UG/KG	CIS-1,3-DICHLOROPROPENE
10U	UG/KG	METHYL ISOBUTYL KETONE
10U	UG/KG	TOLUENE
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE
10U	UG/KG	1,1,2-TRICHLOROETHANE
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
10U	UG/KG	METHYL BUTYL KETONE
10U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10U	UG/KG	CHLOROBENZENE
10U	UG/KG	ETHYL BENZENE
10U	UG/KG	TOTAL XYLENES
10U	UG/KG	STYRENE
10U	UG/KG	BROMOFORM
10U	UG/KG	ISOPROPYLBENZENE
10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	1,2-DICHLOROBENZENE
10U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	1,2,4-TRICHLOROBENZENE
16	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4806 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC01SB / MD No: 0J68

Media: SUBSURFACE SOIL (> 12") D No: 0J68

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 11:30

Ending:

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
410J	UG/KG	CYCLOTETRASIOXANE; OCTAMETH
56J	UG/KG	UNKNOWN SIOXANE

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4806 FY 2001 Project: 01-0528

Produced by: McConney, John

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 11:30

Id/Station: LC01SB /

MD No: 0J68

Inorg Contractor: SENTIN

Ending:

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J68

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11UJ	UG/KG	DICHLORODIFLUOROMETHANE
11UJ	UG/KG	CHLOROMETHANE
11U	UG/KG	VINYL CHLORIDE
11U	UG/KG	BROMOMETHANE
11U	UG/KG	CHLOROETHANE
11U	UG/KG	TRICHLOROFLUOROMETHANE
11U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
11UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
11U	UG/KG	METHYL ACETONE
11U	UG/KG	CARBON DISULFIDE
11U	UG/KG	METHYL ACETATE
24U	UG/KG	METHYLENE CHLORIDE
11U	UG/KG	TRANS-1,2-DICHLOROETHENE
11U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
11U	UG/KG	1,1-DICHLOROETHANE
11U	UG/KG	CIS-1,2-DICHLOROETHENE
11U	UG/KG	METHYL ETHYL KETONE
11U	UG/KG	CHLOROFORM
11U	UG/KG	1,1,1-TRICHLOROETHANE
11U	UG/KG	CYCLOHEXANE
11UJ	UG/KG	CARBON TETRACHLORIDE
11U	UG/KG	BENZENE
11U	UG/KG	1,2-DICHLOROETHANE
11U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
11UJ	UG/KG	METHYLCYCLOHEXANE
11U	UG/KG	1,2-DICHLOROPROPANE
11U	UG/KG	BROMODICHLOROMETHANE
11U	UG/KG	CIS-1,3-DICHLOROPROPENE
11U	UG/KG	METHYL ISOBUTYL KETONE
11U	UG/KG	TOLUENE
11U	UG/KG	TRANS-1,3-DICHLOROPROPENE
11U	UG/KG	1,1,2-TRICHLOROETHANE
11U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
11U	UG/KG	METHYL BUTYL KETONE
11U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
11U	UG/KG	1,2-DIBROMOETHANE (EDB)
11U	UG/KG	CHLOROBENZENE
11U	UG/KG	ETHYL BENZENE
11U	UG/KG	TOTAL XYLENES
11U	UG/KG	STYRENE
11U	UG/KG	BROMOFORM
11U	UG/KG	ISOPROPYLBENZENE
11U	UG/KG	1,1,2,2-TETRACHLOROETHANE
11U	UG/KG	1,3-DICHLOROBENZENE
11U	UG/KG	1,4-DICHLOROBENZENE
11U	UG/KG	1,2-DICHLOROBENZENE
11UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
11U	UG/KG	1,2,4-TRICHLOROBENZENE
9	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4778 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SS /

MD No: 0J40

Media: SURFACE SOIL (0" - 12")

D No: 0J40

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:40

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
11UJ	UG/KG	DICHLORODIFLUOROMETHANE	11U	UG/KG	1,2-DIBROMOETHANE (EDB)
11UJ	UG/KG	CHLOROMETHANE	11U	UG/KG	CHLOROBENZENE
11UJ	UG/KG	VINYL CHLORIDE	11U	UG/KG	ETHYL BENZENE
11UJ	UG/KG	BROMOMETHANE	11U	UG/KG	TOTAL XYLENES
11U	UG/KG	CHLOROETHANE	11U	UG/KG	STYRENE
11UJ	UG/KG	TRICHLOROFLUOROMETHANE	11U	UG/KG	BROMOFORM
11U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11U	UG/KG	ISOPROPYLBENZENE
11U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	11U	UG/KG	1,1,2,2-TETRACHLOROETHANE
43	UG/KG	ACETONE	11U	UG/KG	1,3-DICHLOROBENZENE
11U	UG/KG	CARBON DISULFIDE	11U	UG/KG	1,4-DICHLOROBENZENE
11U	UG/KG	METHYL ACETATE	11U	UG/KG	1,2-DICHLOROBENZENE
24UJ	UG/KG	METHYLENE CHLORIDE	11U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
11U	UG/KG	TRANS-1,2-DICHLOROETHENE	11U	UG/KG	1,2,4-TRICHLOROBENZENE
11U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	22	%	% MOISTURE
11U	UG/KG	1,1-DICHLOROETHANE			
11U	UG/KG	CIS-1,2-DICHLOROETHENE			
11U	UG/KG	METHYL ETHYL KETONE			
11U	UG/KG	CHLOROFORM			
11U	UG/KG	1,1,1-TRICHLOROETHANE			
11U	UG/KG	CYCLOHEXANE			
11U	UG/KG	CARBON TETRACHLORIDE			
11U	UG/KG	BENZENE			
11U	UG/KG	1,2-DICHLOROETHANE			
11U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
11U	UG/KG	METHYLCYCLOHEXANE			
11U	UG/KG	1,2-DICHLOROPROPANE			
11U	UG/KG	BROMODICHLOROMETHANE			
11U	UG/KG	CIS-1,3-DICHLOROPROPENE			
11U	UG/KG	METHYL ISOBUTYL KETONE			
11U	UG/KG	TOLUENE			
11U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
11U	UG/KG	1,1,2-TRICHLOROETHANE			
11U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
11U	UG/KG	METHYL BUTYL KETONE			
11U	UG/KG	DIBROMOCHLOROMETHANE			

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4803 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Programs: SF Case No: 29099

Id/Station: LC08SS / MD No: 0J65

Media: SURFACE SOIL (0" - 12") D No: 0J65

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:55

Ending:

RESULTS	UNITS	ANALYTE
260J	UG/KG	2 UNKNOWN SILOXANES

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4803 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SS /

MD No: 0J65

Media: SURFACE SOIL (0" - 12")

D No: 0J65

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11UJ	UG/KG	DICHLORODIFLUOROMETHANE
11UJ	UG/KG	CHLOROMETHANE
11U	UG/KG	VINYL CHLORIDE
11U	UG/KG	BROMOMETHANE
11U	UG/KG	CHLOROETHANE
11U	UG/KG	TRICHLOROFLUOROMETHANE
11U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
11UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
11U	UG/KG	ACETONE
11U	UG/KG	CARBON DISULFIDE
11U	UG/KG	METHYL ACETATE
28U	UG/KG	METHYLENE CHLORIDE
11U	UG/KG	TRANS-1,2-DICHLOROETHENE
11U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
11U	UG/KG	1,1-DICHLOROETHANE
11U	UG/KG	CIS-1,2-DICHLOROETHENE
11U	UG/KG	METHYL ETHYL KETONE
11U	UG/KG	CHLOROFORM
11U	UG/KG	1,1,1-TRICHLOROETHANE
11U	UG/KG	CYCLOHEXANE
11UJ	UG/KG	CARBON TETRACHLORIDE
11U	UG/KG	BENZENE
11U	UG/KG	1,2-DICHLOROETHANE
11U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
11UJ	UG/KG	METHYLCYCLOHEXANE
11U	UG/KG	1,2-DICHLOROPROPANE
11U	UG/KG	BROMODICHLOROMETHANE
11U	UG/KG	CIS-1,3-DICHLOROPROPENE
11U	UG/KG	METHYL ISOBUTYL KETONE
11U	UG/KG	TOLUENE
11U	UG/KG	TRANS-1,3-DICHLOROPROPENE
11U	UG/KG	1,1,2-TRICHLOROETHANE
11U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
11U	UG/KG	METHYL BUTYL KETONE
11U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
11U	UG/KG	1,2-DIBROMOETHANE (EDB)
11U	UG/KG	CHLOROBENZENE
11U	UG/KG	ETHYL BENZENE
11U	UG/KG	TOTAL XYLENES
11U	UG/KG	STYRENE
11U	UG/KG	BROMOFORM
11U	UG/KG	ISOPROPYLBENZENE
11U	UG/KG	1,1,2,2-TETRACHLOROETHANE
11U	UG/KG	1,3-DICHLOROBENZENE
11U	UG/KG	1,4-DICHLOROBENZENE
11U	UG/KG	1,2-DICHLOROBENZENE
11UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
11U	UG/KG	1,2,4-TRICHLOROBENZENE
11	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4795 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC07SS / MD No: 0J57  
Media: SURFACE SOIL (0" - 12") D No: 0J57

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/02/2001 16:45  
Ending:

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
330J	UG/KG	2 UNKNOWN SILOXANES

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4795 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC07SS / MD No: 0J57

Media: SURFACE SOIL (0" - 12") D No: 0J57

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:45

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
11UJ	UG/KG	DICHLORODIFLUOROMETHANE
11UJ	UG/KG	CHLOROMETHANE
11U	UG/KG	VINYL CHLORIDE
11U	UG/KG	BROMOMETHANE
11U	UG/KG	CHLOROETHANE
11U	UG/KG	TRICHLOROFLUOROMETHANE
11U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
11UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
11U	UG/KG	ACETONE
11U	UG/KG	CARBON DISULFIDE
11U	UG/KG	METHYL ACETATE
16U	UG/KG	METHYLENE CHLORIDE
11U	UG/KG	TRANS-1,2-DICHLOROETHENE
11U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
11U	UG/KG	1,1-DICHLOROETHANE
11U	UG/KG	CIS-1,2-DICHLOROETHENE
11U	UG/KG	METHYL ETHYL KETONE
11U	UG/KG	CHLOROFORM
11U	UG/KG	1,1,1-TRICHLOROETHANE
11U	UG/KG	CYCLOHEXANE
11UJ	UG/KG	CARBON TETRACHLORIDE
11U	UG/KG	BENZENE
11U	UG/KG	1,2-DICHLOROETHANE
11U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
11UJ	UG/KG	METHYLCYCLOHEXANE
11U	UG/KG	1,2-DICHLOROPROPANE
11U	UG/KG	BROMODICHLOROMETHANE
11U	UG/KG	CIS-1,3-DICHLOROPROPENE
11U	UG/KG	METHYL ISOBUTYL KETONE
11U	UG/KG	TOLUENE
11U	UG/KG	TRANS-1,3-DICHLOROPROPENE
11U	UG/KG	1,1,2-TRICHLOROETHANE
11U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
11U	UG/KG	METHYL BUTYL KETONE
11U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
11U	UG/KG	1,2-DIBROMOETHANE (EDB)
11U	UG/KG	CHLOROBENZENE
11U	UG/KG	ETHYL BENZENE
11U	UG/KG	TOTAL XYLENES
11U	UG/KG	STYRENE
11U	UG/KG	BROMOFORM
11U	UG/KG	ISOPROPYLBENZENE
11U	UG/KG	1,1,2,2-TETRACHLOROETHANE
11U	UG/KG	1,3-DICHLOROBENZENE
11U	UG/KG	1,4-DICHLOROBENZENE
11U	UG/KG	1,2-DICHLOROBENZENE
11UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
11U	UG/KG	1,2,4-TRICHLOROBENZENE
15	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4790 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 12:05

Id/Station: LC06SS /

MD No: 0J52

Inorg Contractor: SENTIN

Ending:

Media: SURFACE SOIL (0" - 12")

D No: 0J52

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
250J	UG/KG	2 UNKNOWN SILOXANES

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4790 FY 2001 Project: 01-0528

## VOLATILES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC06SS /

MD No: 0J52

Media: SURFACE SOIL (0" - 12")

D No: 0J52

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 12:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE
10UJ	UG/KG	CHLOROMETHANE
10UJ	UG/KG	VINYL CHLORIDE
10UJ	UG/KG	BROMOMETHANE
10U	UG/KG	CHLOROETHANE
10UJ	UG/KG	TRICHLOROFLUOROMETHANE
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
10U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
10U	UG/KG	ACETONE
10U	UG/KG	CARBON DISULFIDE
10U	UG/KG	METHYL ACETATE
17UJ	UG/KG	METHYLENE CHLORIDE
10U	UG/KG	TRANS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
10U	UG/KG	1,1-DICHLOROETHANE
10U	UG/KG	CIS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL ETHYL KETONE
10U	UG/KG	CHLOROFORM
10U	UG/KG	1,1,1-TRICHLOROETHANE
10U	UG/KG	CYCLOHEXANE
10U	UG/KG	CARBON TETRACHLORIDE
10U	UG/KG	BENZENE
10U	UG/KG	1,2-DICHLOROETHANE
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
10U	UG/KG	METHYLCYCLOHEXANE
10U	UG/KG	1,2-DICHLOROPROPANE
10U	UG/KG	BROMODICHLOROMETHANE
10U	UG/KG	CIS-1,3-DICHLOROPROPENE
10U	UG/KG	METHYL ISOBUTYL KETONE
10U	UG/KG	TOLUENE
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE
10U	UG/KG	1,1,2-TRICHLOROETHANE
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
10U	UG/KG	METHYL BUTYL KETONE
10U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10U	UG/KG	CHLOROBENZENE
10U	UG/KG	ETHYL BENZENE
10U	UG/KG	TOTAL XYLENES
10U	UG/KG	STYRENE
10U	UG/KG	BROMOFORM
10U	UG/KG	ISOPROPYLBENZENE
10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	1,2-DICHLOROBENZENE
10U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	1,2,4-TRICHLOROBENZENE
4	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4788 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC05SS / MD No: 0J50

Media: SURFACE SOIL (0" - 12") D No: 0J50

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:43

Ending:

RESULTS	UNITS	ANALYTE
92J	UG/KG	UNKNOWN SILOXANE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4788 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC05SS / MD No: 0J50

Media: SURFACE SOIL (0" - 12") D No: 0J50

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:43

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE	10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10UJ	UG/KG	CHLOROMETHANE	10U	UG/KG	CHLOROBENZENE
10U	UG/KG	VINYL CHLORIDE	10U	UG/KG	ETHYL BENZENE
10U	UG/KG	BROMOMETHANE	10U	UG/KG	TOTAL XYLENES
10U	UG/KG	CHLOROETHANE	10U	UG/KG	STYRENE
10U	UG/KG	TRICHLOROFLUOROMETHANE	10U	UG/KG	BROMOFORM
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	10U	UG/KG	ISOPROPYLBENZENE
10UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	ACETONE	10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	CARBON DISULFIDE	10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	METHYL ACETATE	10U	UG/KG	1,2-DICHLOROBENZENE
34U	UG/KG	METHYLENE CHLORIDE	10UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	TRANS-1,2-DICHLOROETHENE	10U	UG/KG	1,2,4-TRICHLOROBENZENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	5	%	% MOISTURE
10U	UG/KG	1,1-DICHLOROETHANE			
10U	UG/KG	CIS-1,2-DICHLOROETHENE			
10U	UG/KG	METHYL ETHYL KETONE			
10U	UG/KG	CHLOROFORM			
10U	UG/KG	1,1,1-TRICHLOROETHANE			
10U	UG/KG	CYCLOHEXANE			
10UJ	UG/KG	CARBON TETRACHLORIDE			
10U	UG/KG	BENZENE			
10U	UG/KG	1,2-DICHLOROETHANE			
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
10UJ	UG/KG	METHYLCYCLOHEXANE			
10U	UG/KG	1,2-DICHLOROPROPANE			
10U	UG/KG	BROMODICHLOROMETHANE			
10U	UG/KG	CIS-1,3-DICHLOROPROPENE			
10U	UG/KG	METHYL ISOBUTYL KETONE			
10U	UG/KG	TOLUENE			
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
10U	UG/KG	1,1,2-TRICHLOROETHANE			
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
10U	UG/KG	METHYL BUTYL KETONE			
10U	UG/KG	DIBROMOCHLOROMETHANE			

Sample 4801 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC04SS / MD No: 0J63

Media: SURFACE SOIL (0" - 12") D No: 0J63

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE	10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10UJ	UG/KG	CHLOROMETHANE	10U	UG/KG	CHLOROBENZENE
10U	UG/KG	VINYL CHLORIDE	10U	UG/KG	ETHYL BENZENE
10U	UG/KG	BROMOMETHANE	10U	UG/KG	TOTAL XYLENES
10U	UG/KG	CHLOROETHANE	10U	UG/KG	STYRENE
10U	UG/KG	TRICHLOROFLUOROMETHANE	10U	UG/KG	BROMOFORM
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	10U	UG/KG	ISOPROPYLBENZENE
10UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	ACETONE	10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	CARBON DISULFIDE	10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	METHYL ACETATE	10U	UG/KG	1,2-DICHLOROBENZENE
23U	UG/KG	METHYLENE CHLORIDE	10UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	TRANS-1,2-DICHLOROETHENE	10U	UG/KG	1,2,4-TRICHLOROBENZENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	11	%	% MOISTURE
10U	UG/KG	1,1-DICHLOROETHANE			
10U	UG/KG	CIS-1,2-DICHLOROETHENE			
10U	UG/KG	METHYL ETHYL KETONE			
10U	UG/KG	CHLOROFORM			
10U	UG/KG	1,1,1-TRICHLOROETHANE			
10U	UG/KG	CYCLOHEXANE			
10UJ	UG/KG	CARBON TETRACHLORIDE			
10U	UG/KG	BENZENE			
10U	UG/KG	1,2-DICHLOROETHANE			
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
10UJ	UG/KG	METHYLCYCLOHEXANE			
10U	UG/KG	1,2-DICHLOROPROPANE			
10U	UG/KG	BROMODICHLOROMETHANE			
10U	UG/KG	CIS-1,3-DICHLOROPROPENE			
10U	UG/KG	METHYL ISOBUTYL KETONE			
10U	UG/KG	TOLUENE			
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
10U	UG/KG	1,1,2-TRICHLOROETHANE			
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
10U	UG/KG	METHYL BUTYL KETONE			
10U	UG/KG	DIBROMOCHLOROMETHANE			

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Page 1 of 1

Sample 4780 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC03SS / MD No: 0J42  
Media: SURFACE SOIL (0" - 12") D No: 0J42

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 03/30/2001 16:00  
Ending:

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
160J	UG/KG	2 UNKNOWN SILOXANES

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4780 FY 2001 Project: 01-0528

Produced by: McConney, John

## VOLATILES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 03/30/2001 16:00

Id/Station: LC03SS /

MD No: 0J42

Inorg Contractor: SENTIN

Ending:

Media: SURFACE SOIL (0" - 12")

D No: 0J42

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
10UJ	UG/KG	DICHLORODIFLUOROMETHANE
10UJ	UG/KG	CHLOROMETHANE
10UJ	UG/KG	VINYL CHLORIDE
10UJ	UG/KG	BROMOMETHANE
10U	UG/KG	CHLOROETHANE
10UJ	UG/KG	TRICHLOROFLUOROMETHANE
10U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)
10U	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)
10U	UG/KG	ACETONE
10U	UG/KG	CARBON DISULFIDE
10U	UG/KG	METHYL ACETATE
23UJ	UG/KG	METHYLENE CHLORIDE
10U	UG/KG	TRANS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL T-BUTYL ETHER (MTBE)
10U	UG/KG	1,1-DICHLOROETHANE
10U	UG/KG	CIS-1,2-DICHLOROETHENE
10U	UG/KG	METHYL ETHYL KETONE
10U	UG/KG	CHLOROFORM
10U	UG/KG	1,1,1-TRICHLOROETHANE
10U	UG/KG	CYCLOHEXANE
10U	UG/KG	CARBON TETRACHLORIDE
10U	UG/KG	BENZENE
10U	UG/KG	1,2-DICHLOROETHANE
10U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)
10U	UG/KG	METHYLCYCLOHEXANE
10U	UG/KG	1,2-DICHLOROPROPANE
10U	UG/KG	BROMODICHLOROMETHANE
10U	UG/KG	CIS-1,3-DICHLOROPROPENE
10U	UG/KG	METHYL ISOBUTYL KETONE
10U	UG/KG	TOLUENE
10U	UG/KG	TRANS-1,3-DICHLOROPROPENE
10U	UG/KG	1,1,2-TRICHLOROETHANE
10U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)
10U	UG/KG	METHYL BUTYL KETONE
10U	UG/KG	DIBROMOCHLOROMETHANE

RESULTS	UNITS	ANALYTE
10U	UG/KG	1,2-DIBROMOETHANE (EDB)
10U	UG/KG	CHLOROBENZENE
10U	UG/KG	ETHYL BENZENE
10U	UG/KG	TOTAL XYLENES
10U	UG/KG	STYRENE
10U	UG/KG	BROMOFORM
10U	UG/KG	ISOPROPYLBENZENE
10U	UG/KG	1,1,2,2-TETRACHLOROETHANE
10U	UG/KG	1,3-DICHLOROBENZENE
10U	UG/KG	1,4-DICHLOROBENZENE
10U	UG/KG	1,2-DICHLOROBENZENE
10U	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
10U	UG/KG	1,2,4-TRICHLOROBENZENE
11	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4776 FY 2001 Project: 01-0528

Produced by: McConney, John

VOLATILES SCAN

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Programs: SF Case No: 29099

Beginning: 03/30/2001 11:35

Id/Station: LC02SS / MD No: 0J38

Ending:

Media: SURFACE SOIL (0" - 12") D No: 0J38

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
15UJ	UG/KG	DICHLORODIFLUOROMETHANE	15U	UG/KG	1,2-DIBROMOETHANE (EDB)
15UJ	UG/KG	CHLOROMETHANE	15U	UG/KG	CHLOROBENZENE
15U	UG/KG	VINYL CHLORIDE	15U	UG/KG	ETHYL BENZENE
15U	UG/KG	BROMOMETHANE	15U	UG/KG	TOTAL XYLENES
15U	UG/KG	CHLOROETHANE	15U	UG/KG	STYRENE
15U	UG/KG	TRICHLOROFLUOROMETHANE	15U	UG/KG	BROMOFORM
15U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	15U	UG/KG	ISOPROPYLBENZENE
15UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	15U	UG/KG	1,1,2,2-TETRACHLOROETHANE
15U	UG/KG	ACETONE	15U	UG/KG	1,3-DICHLOROBENZENE
15U	UG/KG	CARBON DISULFIDE	15U	UG/KG	1,4-DICHLOROBENZENE
15U	UG/KG	METHYL ACETATE	15U	UG/KG	1,2-DICHLOROBENZENE
23U	UG/KG	METHYLENE CHLORIDE	15UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
15U	UG/KG	TRANS-1,2-DICHLOROETHENE	15U	UG/KG	1,2,4-TRICHLOROBENZENE
15U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	30	%	% MOISTURE
15U	UG/KG	1,1-DICHLOROETHANE			
15U	UG/KG	CIS-1,2-DICHLOROETHENE			
15U	UG/KG	METHYL ETHYL KETONE			
15U	UG/KG	CHLOROFORM			
15U	UG/KG	1,1,1-TRICHLOROETHANE			
15U	UG/KG	CYCLOHEXANE			
15UJ	UG/KG	CARBON TETRACHLORIDE			
15U	UG/KG	BENZENE			
15U	UG/KG	1,2-DICHLOROETHANE			
15U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
15UJ	UG/KG	METHYLCYCLOHEXANE			
15U	UG/KG	1,2-DICHLOROPROPANE			
15U	UG/KG	BROMODICHLOROMETHANE			
15U	UG/KG	CIS-1,3-DICHLOROPROPENE			
15U	UG/KG	METHYL ISOBUTYL KETONE			
15U	UG/KG	TOLUENE			
15U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
15U	UG/KG	1,1,2-TRICHLOROETHANE			
15U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
15U	UG/KG	METHYL BUTYL KETONE			
15U	UG/KG	DIBROMOCHLOROMETHANE			

Sample 4805 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC01SS / MD No: 0J67  
Media: SURFACE SOIL (0" - 12") D No: 0J67

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/03/2001 11:20  
Ending:

RESULTS	UNITS	ANALYTE
1000J	UG/KG	CYCLOTETRAILOXANE, OCTAMETH
84J	UG/KG	UNKNOWN SILOXANE

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4805 FY 2001 Project: 01-0528

VOLATILES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC01SS / MD No: 0J67

Media: SURFACE SOIL (0" - 12") D No: 0J67

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 11:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
12UJ	UG/KG	DICHLORODIFLUOROMETHANE	12U	UG/KG	1,2-DIBROMOETHANE (EDB)
12UJ	UG/KG	CHLOROMETHANE	12U	UG/KG	CHLOROBENZENE
12U	UG/KG	VINYL CHLORIDE	12U	UG/KG	ETHYL BENZENE
12U	UG/KG	BROMOMETHANE	12U	UG/KG	TOTAL XYLENES
12U	UG/KG	CHLOROETHANE	12U	UG/KG	STYRENE
12U	UG/KG	TRICHLOROFLUOROMETHANE	12U	UG/KG	BROMOFORM
12U	UG/KG	1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	12U	UG/KG	ISOPROPYLBENZENE
12UJ	UG/KG	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	12U	UG/KG	1,1,2,2-TETRACHLOROETHANE
<del>12UJ</del>	<del>UG/KG</del>	<del>METHYL ACETATE</del>	12U	UG/KG	1,3-DICHLOROBENZENE
12U	UG/KG	CARBON DISULFIDE	12U	UG/KG	1,4-DICHLOROBENZENE
12U	UG/KG	METHYL ACETATE	12U	UG/KG	1,2-DICHLOROBENZENE
38U	UG/KG	METHYLENE CHLORIDE	12UJ	UG/KG	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)
12U	UG/KG	TRANS-1,2-DICHLOROETHENE	12U	UG/KG	1,2,4-TRICHLOROBENZENE
12U	UG/KG	METHYL T-BUTYL ETHER (MTBE)	10	%	% MOISTURE
12U	UG/KG	1,1-DICHLOROETHANE			
12U	UG/KG	CIS-1,2-DICHLOROETHENE			
12U	UG/KG	METHYL ETHYL KETONE			
12U	UG/KG	CHLOROFORM			
12U	UG/KG	1,1,1-TRICHLOROETHANE			
12U	UG/KG	CYCLOHEXANE			
12UJ	UG/KG	CARBON TETRACHLORIDE			
12U	UG/KG	BENZENE			
12U	UG/KG	1,2-DICHLOROETHANE			
12U	UG/KG	TRICHLOROETHENE (TRICHLOROETHYLENE)			
12UJ	UG/KG	METHYLCYCLOHEXANE			
12U	UG/KG	1,2-DICHLOROPROPANE			
12U	UG/KG	BROMODICHLOROMETHANE			
12U	UG/KG	CIS-1,3-DICHLOROPROPENE			
12U	UG/KG	METHYL ISOBUTYL KETONE			
12U	UG/KG	TOLUENE			
12U	UG/KG	TRANS-1,3-DICHLOROPROPENE			
12U	UG/KG	1,1,2-TRICHLOROETHANE			
12U	UG/KG	TETRACHLOROETHENE (TETRACHLOROETHYLENE)			
12U	UG/KG	METHYL BUTYL KETONE			
12U	UG/KG	DIBROMOCHLOROMETHANE			

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

APR 19 REC'D

MEMORANDUM

Date: 04/16/2001

Subject: Results of VOLATILES Sample Analysis  
01-0529 Latex Construction Co  
Thunderbolt, GA

From: Allen, Frank

To: King, CharlesL

CC: Heather Kennedy  
START/TT

Thru: Cosgrove, Bill  
Chief, Organic Chemistry Section  
Analytical Support Branch

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number: 01-0528 SAS Number: N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
4804	heptachlor, alpha-chlordane, gamma-chlordane	N	difference in columns
4805	endrin ketone	N	difference in columns
4808,4815	all compounds	J	low surrogate recovery
4821	dieldrin	N	difference in columns

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
<b><u>PEST</u></b>			
4775,4782,4783	all compounds	J	exceeded holding times
4775,4782-4785, 4787,4792,4800, 4808,4811,4812, 4817,4820,4821	endosulfan I, endosulfan II	J	warning low in PE sample
4776-4781,4786, 4788-4791,4793- 4799,4801-4807, 4809,4810,4815, 4818,4819	endosulfan I	R	missed in PE sample
4776,4777,4779- 4781,4785-4787, 4789-4793	4,4'-DDT	J	erratic response factor
4777,4780	dieldrin	N	difference in columns
4778	dieldrin, endrin aldehyde	N	difference in columns
4787,4789	all compounds	J	low surrogate recovery
4788	4,4'-DDT	N	difference in columns
4788	endosulfan II, 4,4'-DDT, methoxychlor, gamma-chlordane	J	high surrogate recovery
4790	dieldrin	N	difference in columns
4791	methoxychlor	J,N	high surrogate recovery, difference in columns
4795,4802	dieldrin	N	difference in columns
4796	aroclor-1254	J	< quantitation limit
4798	alpha-BHC, dieldrin	N	difference in columns
4803	4,4'-DDT, endrin ketone, gamma-chlordane	N	difference in columns

## ORGANIC DATA QUALIFIER REPORT

Case Number:	29099	Project Number	01-0528	SAS Number	N/A
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Site ID:	Latex Construction Co, Thunderbolt, GA
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Date:	5/4/01
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<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
4803-4807,4815	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-bromophenyl-phenylether, hexachlorobenzene, pentachlorophenol	J	erratic response factor
4804	fluoranthene, pyrene	J	< quantitation limit
4805	fluoranthene, pyrene, chrysene, benzo(b)fluoranthene	J	< quantitation limit
4807	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4808	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor
4809-4810	benzaldehyde, 2,2'-oxybis(1-chloropropane), benzo(g,h,i)perylene	J	erratic response factor
4809	phenanthrene, fluoranthene, pyrene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4811,4812,4817-4820	benzaldehyde, 2,2'-oxybis(1-chloropropane), hexachlorobenzene, atrazine, 3,3'-dichlorobenzidine	J	erratic response factor
4811	naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, fluoranthene	J	< quantitation limit
4812	acenaphthene, fluorene, phenanthrene	J	< quantitation limit
4819	benzaldehyde, fluoranthene, pyrene, chrysene	J	< quantitation limit
4821	benzaldehyde, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, atrazine, benzo(k)fluoranthene	J	erratic response factor
4821	naphthalene, 2-methylnaphthalene, phenanthrene, anthracene, fluoranthene	J	< quantitation limit

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
4795	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4797	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene	J	< quantitation limit
4799,4801,4802	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-bromophenyl-phenylether, hexachlorobenzene, pentachlorophenol	J	erratic response factor
4799	fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4800	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), hexachlorobutadiene, hexachlorocyclopentadiene, 4-nitrophenol, atrazine, di-n-octylphthalate	J	erratic response factor
4801	2-methylnaphthalene, 1,1'-biphenyl, acenaphthene, dibenzofuran, carbazole, chrysene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
4802	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4803	benzaldehyde, phenol, acetophenone, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
4778	2-methylphenol, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4778-4781,4786, 4788-4791,4793	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, butylbenzylphthalate	J	erratic response factor
4780	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4782-4783,4785	benzaldehyde	J	erratic response factor
4784	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor
4787,4792	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 4-nitrophenol	J	erratic response factor
4788,4791	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4790	acenaphthene, phenanthrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, benzo(g,h,i)perylene	J	< quantitation limit
4794-4798	benzaldehyde, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, benzo(k)fluoranthene	J	erratic response factor
4794	fluoranthene, pyrene	J	< quantitation limit

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

Affected Samples	Compound or Fraction	Flag Used	Reason
<b>VOA</b>			
4776,4779,4788, 4794,4795,4797-4799,4801-4807, 4815	dichlorodifluoromethane, chloromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, methylcyclohexane, 1,2-dibromo-3-chloropropane	J	erratic response factor
4777-4778,4780, 4781,4786,4789-4791,4793,4822	dichlorodifluoromethane, chloromethane, vinyl chloride, bromomethane, trichlorofluoromethane, methylene chloride	J	erratic response factor
4779,4794,4799, 4807,4809,4810, 4815	acetone	J	contaminated storage blank
4796,4809,4810, 4818,4819	dichlorodifluoromethane, chloromethane, trichlorofluoromethane, acetone, methyl acetate, methylene chloride, tert-butyl methyl ether, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, 1,2-dibromoethane, 1,3-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, 1,2,4-trichlorobenzene	J	erratic response factor
<b>BNA</b>			
4775	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor
4776-4777	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, butylbenzylphthalate	J	erratic response factor
4777	phenanthrene, anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

MEMORANDUM

MAY 30 2000

Date: 05/24/2001

Subject: Results of VOLATILES Sample Analysis  
01-0528 Latex Construction Co  
Thunderbolt, GA

From: McConney, John

To: King, CharlesL

A handwritten signature in dark ink, appearing to read "John McConney", written over the "To:" line.

CC: Heather Kennedy  
START/TT

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

Sample 4821 FY. 2001 Project: 01-0528

Produced by: McConney, John

EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF Case No: 29099

Beginning: 04/04/2001 12:10

Id/Station: LC03GW / MD No: 0J83

Ending:

Media: GROUNDWATER D No: 0J83 Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
200UJ	UG/L	BENZALDEHYDE
200U	UG/L	PHENOL
200U	UG/L	BIS(2-CHLOROETHYL) ETHER
200U	UG/L	2-CHLOROPHENOL
200U	UG/L	2-METHYLPHENOL
200UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
200U	UG/L	ACETOPHENONE
200U	UG/L	(3-AND/OR 4-)METHYLPHENOL
200U	UG/L	N-NITROSODI-N-PROPYLAMINE
200U	UG/L	HEXACHLOROETHANE
200U	UG/L	NITROBENZENE
200U	UG/L	ISOPHORONE
200U	UG/L	2-NITROPHENOL
200U	UG/L	2,4-DIMETHYLPHENOL
200U	UG/L	BIS(2-CHLOROETHOXY)METHANE
200U	UG/L	2,4-DICHLOROPHENOL
50J	UG/L	NAPHTHALENE
200U	UG/L	4-CHLOROANILINE
200U	UG/L	HEXACHLOROBUTADIENE
200U	UG/L	CAPROLACTAM
200U	UG/L	4-CHLORO-3-METHYLPHENOL
51J	UG/L	2-METHYLNAPHTHALENE
200U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
200U	UG/L	2,4,6-TRICHLOROPHENOL
500U	UG/L	2,4,5-TRICHLOROPHENOL
200U	UG/L	1,1-BIPHENYL
200U	UG/L	2-CHLORONAPHTHALENE
500UJ	UG/L	2-NITROANILINE
200U	UG/L	DIMETHYL PHTHALATE
200U	UG/L	2,6-DINITROTOLUENE
200U	UG/L	ACENAPHTHYLENE
500U	UG/L	3-NITROANILINE
200U	UG/L	ACENAPHTHENE
500U	UG/L	2,4-DINITROPHENOL
500U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
200U	UG/L	DIBENZOFURAN
200U	UG/L	2,4-DINITROTOLUENE
200U	UG/L	DIETHYL PHTHALATE
200U	UG/L	FLUORENE
200U	UG/L	4-CHLOROPHENYL PHENYL ETHER
500U	UG/L	4-NITROANILINE
500U	UG/L	2-METHYL-4,6-DINITROPHENOL
200U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
200U	UG/L	4-BROMOPHENYL PHENYL ETHER
200U	UG/L	HEXACHLOROBENZENE (HCB)
200UJ	UG/L	ATRAZINE
500U	UG/L	PENTACHLOROPHENOL
130J	UG/L	PHENANTHRENE
20J	UG/L	ANTHRACENE
200U	UG/L	CARBAZOLE
200U	UG/L	DI-N-BUTYLPHTHALATE
20J	UG/L	FLUORANTHENE
200U	UG/L	PYRENE
200U	UG/L	BENZYL BUTYL PHTHALATE
200U	UG/L	3,3'-DICHLOROBENZIDINE
200U	UG/L	BENZO(A)ANTHRACENE
200U	UG/L	CHRYSENE
200U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
200U	UG/L	DI-N-OCTYLPHTHALATE
200U	UG/L	BENZO(B)FLUORANTHENE
200UJ	UG/L	BENZO(K)FLUORANTHENE
200U	UG/L	BENZO-A-PYRENE
200U	UG/L	INDENO (1,2,3-CD) PYRENE
200U	UG/L	DIBENZO(A,H)ANTHRACENE
200U	UG/L	BENZO(GHI)PERYLENE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4821 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC03GW / MD No: 0J83

Media: GROUNDWATER D No: 0J83

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/04/2001 12:10

Ending:

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
120NJ	UG/L	NAPHTHALENE, DECAHYDRO-
860JN	UG/L	2 UNKNOWN AROMATIC COMPOUNDS
140NJ	UG/L	BENZENE, 1,2,3,4-TETRAMETHYL
580J	UG/L	4 UNKNOWN
130NJ	UG/L	NAPHTHALENE, 1-METHYL-
240NJ	UG/L	NAPHTHALENE, 1,5-DIMETHYL-
100NJ	UG/L	NAPHTHALENE, 2 - (1-METHYLETHY
750NJ	UG/L	NAPHTHALENE, 1,4,6-TRIMETHYL
210NJ	UG/L	NAPHTHALENE, 2,3,6-TRIMETHYL
180NJ	UG/L	NAPHTHALENE, 1,4,5-TRIMETHYL
370NJ	UG/L	9H-FLUORENE, 1-METHYL-

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

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Sample 4811 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04GW /

MD No: 0J73

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J73

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 14:01

Ending:

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
1J	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
2J	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
5J	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
2J	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
4J	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10UJ	UG/L	HEXACHLOROBENZENE (HCB)
10UJ	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
6J	UG/L	PHENANTHRENE
1J	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
1J	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10UJ	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

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Sample 4811 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04GW /

MD No: 0J73

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J73

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 14:01

Ending:

RESULTS	UNITS	ANALYTE
3NJ	UG/L	BENZENE, 2-ETHYL-1,4-DIMETHY
5NJ	UG/L	NAPHTHALENE, 2-METHYL-
69J	UG/L	7 UNKNOWN
10NJ	UG/L	NAPHTHALENE, 1,5-DIMETHYL-
9NJ	UG/L	NAPHTHALENE, 2,3-DIMETHYL-
5NJ	UG/L	NAPHTHALENE, 2-(1-METHYLETHY
10NJ	UG/L	NAPHTHALENE, 1,6,7-TRIMETHYL
18NJ	UG/L	NAPHTHALENE, 1,6,7-TRIMETHYL
6NJ	UG/L	PHENOL, 4,4'-BUTYLIDENE BIS [2
6JN	UG/L	UNKNOWN AMIDE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

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Sample 4808 FY 2001 Project: 01-0528

EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC06GW / MD No: 0J70

Media: GROUNDWATER D No: 0J70

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:35

Ending:

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE	10U	UG/L	DIBENZOFURAN
10U	UG/L	PHENOL	10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	BIS(2-CHLOROETHYL) ETHER	10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	2-CHLOROPHENOL	10U	UG/L	FLUORENE
10U	UG/L	2-METHYLPHENOL	10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER	25U	UG/L	4-NITROANILINE
10U	UG/L	ACETOPHENONE	25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL	10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	N-NITROSODI-N-PROPYLAMINE	10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROETHANE	10U	UG/L	HEXACHLOROBENZENE (HCB)
10U	UG/L	NITROBENZENE	10UJ	UG/L	ATRAZINE
10U	UG/L	ISOPHORONE	25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	2-NITROPHENOL	10U	UG/L	PHENANTHRENE
10U	UG/L	2,4-DIMETHYLPHENOL	10U	UG/L	ANTHRACENE
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE	10U	UG/L	CARBAZOLE
10U	UG/L	2,4-DICHLOROPHENOL	10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	NAPHTHALENE	10U	UG/L	FLUORANTHENE
10UJ	UG/L	4-CHLOROANILINE	10U	UG/L	PYRENE
10U	UG/L	HEXACHLOROBUTADIENE	10UJ	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	CAPROLACTAM	10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	4-CHLORO-3-METHYLPHENOL	10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	2-METHYLNAPHTHALENE	10U	UG/L	CHRYSENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)	10UJ	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	2,4,6-TRICHLOROPHENOL	10UJ	UG/L	DI-N-OCTYLPHTHALATE
25U	UG/L	2,4,5-TRICHLOROPHENOL	10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	1,1-BIPHENYL	10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	2-CHLORONAPHTHALENE	10U	UG/L	BENZO-A-PYRENE
25U	UG/L	2-NITROANILINE	10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIMETHYL PHTHALATE	10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	2,6-DINITROTOLUENE	10U	UG/L	BENZO(GH)PERYLENE
10U	UG/L	ACENAPHTHYLENE			
25U	UG/L	3-NITROANILINE			
2J	UG/L	ACENAPHTHENE			
25U	UG/L	2,4-DINITROPHENOL			
25U	UG/L	4-NITROPHENOL			

Sample 4808 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC06GW /

MD No: 0J70

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J70

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:35

Ending:

RESULTS	UNITS	ANALYTE
11J	UG/L	4 UNKNOWNNS
2NJ	UG/L	NAPHTHALENE, 2,6-DIMETHYL-
3NJ	UG/L	DODECANOIC ACID
6NJ	UG/L	DIETHYLTOLUAMIDE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

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Sample 4783 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 03/30/2001 16:30

Id/Station: LC07GW /

MD No: 0J45

Inorg Contractor: SENTIN

Ending:

Media: GROUNDWATER

D No: 0J45

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10U	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
49	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROBENZENE (HCB)
10U	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4783 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC07GW / MD No: 0J45

Media: GROUNDWATER D No: 0J45

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE
2NJ	UG/L	DIETHYLTOLUAMIDE
3J	UG/L	UNKNOWN

TA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4784 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 09:55

Id/Station: LC09GW /

MD No: 0J46

Inorg Contractor: SENTIN

Ending:

Media: GROUNDWATER

D No: 0J46

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10UJ	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROBENZENE (HCB)
10UJ	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10UJ	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10UJ	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10UJ	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

ic indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4784 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09GW /

MD No: 0J46

Media: GROUNDWATER

D No: 0J46

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 09:55

Ending:

RESULTS	UNITS	ANALYTE
3NJ	UG/L	OCTANOIC ACID
3NJ	UG/L	BENZENE, 2-ETHENYL-1,4-DIMET
3NJ	UG/L	NONANOIC ACID
3JN	UG/L	UNKNOWN FATTY ACID
5NJ	UG/L	DODECANAMIDE, N,-BIS (2-HYDR
2NJ	UG/L	TETRADECANOIC ACID
6NJ	UG/L	PHENOL, 4,4'- (1-METHYLETHYL
3J	UG/L	UNKNOWN

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4365 FY 2001 Project: 01-0529

## EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC01MW /

Media: GROUNDWATER

Produced by: Revell, Dennis

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:40

Ending:

RESULTS	UNITS	ANALYTE
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	BENZALDEHYDE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	ACETOPHENONE
10U	UG/L	NITROBENZENE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	1,2,4-TRICHLOROBENZENE
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	ISOPHORONE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
10U	UG/L	2-NITROANILINE
10U	UG/L	ACENAPHTHYLENE
10U	UG/L	ACENAPHTHENE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	3-NITROANILINE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
10U	UG/L	4-NITROANILINE
10U	UG/L	FLUORENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	HEXACHLOROBENZENE (HCB)
10U	UG/L	ATRAZINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	PHENANTHRENE

RESULTS	UNITS	ANALYTE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	2-NITROPHENOL
10U	UG/L	PHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	2,4,6-TRICHLOROPHENOL
10U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	4-CHLORO-3-METHYLPHENOL
20U	UG/L	2,4-DINITROPHENOL
20U	UG/L	2-METHYL-4,6-DINITROPHENOL
20U	UG/L	PENTACHLOROPHENOL
20U	UG/L	4-NITROPHENOL
10U	UG/L	2,3,4,6-TETRACHLOROPHENOL

U-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

U-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4364 FY 2001 Project: 01-0529

## EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC02MW /

Media: GROUNDWATER

Produced by: Revell, Dennis

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

RESULTS	UNITS	ANALYTE
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	BENZALDEHYDE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	ACETOPHENONE
10U	UG/L	NITROBENZENE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	1,2,4-TRICHLOROBENZENE
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	ISOPHORONE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
10U	UG/L	2-NITROANILINE
10U	UG/L	ACENAPHTHYLENE
10U	UG/L	ACENAPHTHENE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	3-NITROANILINE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
10U	UG/L	4-NITROANILINE
10U	UG/L	FLUORENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	HEXACHLOROBENZENE (HCB)
10U	UG/L	ATRAZINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	PHENANTHRENE

RESULTS	UNITS	ANALYTE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	2-NITROPHENOL
10U	UG/L	PHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	2,4,6-TRICHLOROPHENOL
10U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	4-CHLORO-3-METHYLPHENOL
20U	UG/L	2,4-DINITROPHENOL
20U	UG/L	2-METHYL-4,6-DINITROPHENOL
20U	UG/L	PENTACHLOROPHENOL
20U	UG/L	4-NITROPHENOL
10U	UG/L	2,3,4,6-TETRACHLOROPHENOL

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4816	FY 2001	Project: 01-0528	Produced by: McConney, John
EXTRACTABLES SCAN			Requestor:
Facility: Latex Construction Co	Thunderbolt, GA	Case No: 29099	Project Leader: CKING
Program: SF	MD No: 0J78	Inorg Contractor: SENTIN	Beginning: 04/03/2001 17:15
Id/Station: LC01SW /	D No: 0J78	Org Contractor: CEIMIC	Ending:
Media: SURFACE WATER			

RESULTS	UNITS	ANALYTE	RESULTS	UNITS	ANALYTE
NA	UG/L	BENZALDEHYDE	NA	UG/L	DIBENZOFURAN
NA	UG/L	PHENOL	NA	UG/L	2,4-DINITROTOLUENE
NA	UG/L	BIS(2-CHLOROETHYL) ETHER	NA	UG/L	DIETHYL PHTHALATE
NA	UG/L	2-CHLOROPHENOL	NA	UG/L	FLUORENE
NA	UG/L	2-METHYLPHENOL	NA	UG/L	4-CHLOROPHENYL PHENYL ETHER
NA	UG/L	BIS(2-CHLOROISOPROPYL) ETHER	NA	UG/L	4-NITROANILINE
NA	UG/L	ACETOPHENONE	NA	UG/L	2-METHYL-4,6-DINITROPHENOL
NA	UG/L	(3-AND/OR 4-)METHYLPHENOL	NA	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
NA	UG/L	N-NITROSODI-N-PROPYLAMINE	NA	UG/L	4-BROMOPHENYL PHENYL ETHER
NA	UG/L	HEXACHLOROETHANE	NA	UG/L	HEXACHLOROBENZENE (HCB)
NA	UG/L	NITROBENZENE	NA	UG/L	ATRAZINE
NA	UG/L	ISOPHORONE	NA	UG/L	PENTACHLOROPHENOL
NA	UG/L	2-NITROPHENOL	NA	UG/L	PHENANTHRENE
NA	UG/L	2,4-DIMETHYLPHENOL	NA	UG/L	ANTHRACENE
NA	UG/L	BIS(2-CHLOROETHOXY)METHANE	NA	UG/L	CARBAZOLE
NA	UG/L	2,4-DICHLOROPHENOL	NA	UG/L	DI-N-BUTYLPHTHALATE
NA	UG/L	NAPHTHALENE	NA	UG/L	FLUORANTHENE
NA	UG/L	4-CHLOROANILINE	NA	UG/L	PYRENE
NA	UG/L	HEXACHLOROBUTADIENE	NA	UG/L	BENZYL BUTYL PHTHALATE
NA	UG/L	CAPROLACTAM	NA	UG/L	3,3'-DICHLOROBENZIDINE
NA	UG/L	4-CHLORO-3-METHYLPHENOL	NA	UG/L	BENZO(A)ANTHRACENE
NA	UG/L	2-METHYLNAPHTHALENE	NA	UG/L	CHRYSENE
NA	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)	NA	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
NA	UG/L	2,4,6-TRICHLOROPHENOL	NA	UG/L	DI-N-OCTYLPHTHALATE
NA	UG/L	2,4,5-TRICHLOROPHENOL	NA	UG/L	BENZO(B)FLUORANTHENE
NA	UG/L	1,1-BIPHENYL	NA	UG/L	BENZO(K)FLUORANTHENE
NA	UG/L	2-CHLORONAPHTHALENE	NA	UG/L	BENZO-A-PYRENE
NA	UG/L	2-NITROANILINE	NA	UG/L	INDENO (1,2,3-CD) PYRENE
NA	UG/L	DIMETHYL PHTHALATE	NA	UG/L	DIBENZO(A,H)ANTHRACENE
NA	UG/L	2,6-DINITROTOLUENE	NA	UG/L	BENZO(GHI)PERYLENE
NA	UG/L	ACENAPHTHYLENE			
NA	UG/L	3-NITROANILINE			
NA	UG/L	ACENAPHTHENE			
NA	UG/L	2,4-DINITROPHENOL			
NA	UG/L	4-NITROPHENOL			

AMPLE CONTAINER BROKEN WHEN RECEIVED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4817 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co. Thunderbolt, GA

Program: SF

Id/Station: LC01ASW /

Media: SURFACE WATER

Case No: 29099

MD No: 0J79

D No: 0J79

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10UJ	UG/L	HEXACHLOROBENZENE (HCB)
10UJ	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10UJ	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

-average value, NA-not analyzed, NAI-interferences, J-estimated value, N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

-qc indicates that data unusable, compound may or may not be present, resampling and reanalysis is necessary for verification.

Sample 4812 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SW /

MD No: 0J74

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J74

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:30

Ending:

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
1J	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
1J	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10UJ	UG/L	HEXACHLOROBENZENE (HCB)
10UJ	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
2J	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10UJ	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GHI)PERYLENE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

jc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4812 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SW /

MD No: 0J74

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J74

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:30

Ending:

RESULTS	UNITS	ANALYTE
64J	UG/L	8 UNKNOWN
4NJ	UG/L	NAPHTHALENE, 1-METHYL-
8NJ	UG/L	NAPHTHALENE, 1,5-DIMETHYL-
8NJ	UG/L	NAPHTHALENE, 2,3-DIMETHYL-
4NJ	UG/L	NAPHTHALENE, 2-(1-METHYLETHY
29NJ	UG/L	NAPHTHALENE, 2,3,6-TRIMETHYL
9NJ	UG/L	NAPHTHALENE, 2,3,6-TRIMETHYL
18NJ	UG/L	NAPHTHALENE, 1,6,7-TRIMETHYL
3NJ	UG/L	PHENANTHRENE, 2,5-DIMETHYL-
4NJ	UG/L	(CARBETHOXYETHYLIDINE) TRIPHE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4813 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 15:45

Id/Station: LC03SW /

MD No: 0J75

Inorg Contractor: SENTIN

Ending:

Media: SURFACE WATER

D No: 0J75

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
NA	UG/L	BENZALDEHYDE
NA	UG/L	PHENOL
NA	UG/L	BIS(2-CHLOROETHYL) ETHER
NA	UG/L	2-CHLOROPHENOL
NA	UG/L	2-METHYLPHENOL
NA	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
NA	UG/L	ACETOPHENONE
NA	UG/L	(3-AND/OR 4-)METHYLPHENOL
NA	UG/L	N-NITROSODI-N-PROPYLAMINE
NA	UG/L	HEXACHLOROETHANE
NA	UG/L	NITROBENZENE
NA	UG/L	ISOPHORONE
NA	UG/L	2-NITROPHENOL
NA	UG/L	2,4-DIMETHYLPHENOL
NA	UG/L	BIS(2-CHLOROETHOXY)METHANE
NA	UG/L	2,4-DICHLOROPHENOL
NA	UG/L	NAPHTHALENE
NA	UG/L	4-CHLOROANILINE
NA	UG/L	HEXACHLOROBUTADIENE
NA	UG/L	CAPROLACTAM
NA	UG/L	4-CHLORO-3-METHYLPHENOL
NA	UG/L	2-METHYLNAPHTHALENE
NA	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
NA	UG/L	2,4,6-TRICHLOROPHENOL
NA	UG/L	2,4,5-TRICHLOROPHENOL
NA	UG/L	1,1-BIPHENYL
NA	UG/L	2-CHLORONAPHTHALENE
NA	UG/L	2-NITROANILINE
NA	UG/L	DIMETHYL PHTHALATE
NA	UG/L	2,6-DINITROTOLUENE
NA	UG/L	ACENAPHTHYLENE
NA	UG/L	3-NITROANILINE
NA	UG/L	ACENAPHTHENE
NA	UG/L	2,4-DINITROPHENOL
NA	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
NA	UG/L	DIBENZOFURAN
NA	UG/L	2,4-DINITROTOLUENE
NA	UG/L	DIETHYL PHTHALATE
NA	UG/L	FLUORENE
NA	UG/L	4-CHLOROPHENYL PHENYL ETHER
NA	UG/L	4-NITROANILINE
NA	UG/L	2-METHYL-4,6-DINITROPHENOL
NA	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
NA	UG/L	4-BROMOPHENYL PHENYL ETHER
NA	UG/L	HEXACHLOROBENZENE (HCB)
NA	UG/L	ATRAZINE
NA	UG/L	PENTACHLOROPHENOL
NA	UG/L	PHENANTHRENE
NA	UG/L	ANTHRACENE
NA	UG/L	CARBAZOLE
NA	UG/L	DI-N-BUTYLPHTHALATE
NA	UG/L	FLUORANTHENE
NA	UG/L	PYRENE
NA	UG/L	BENZYL BUTYL PHTHALATE
NA	UG/L	3,3'-DICHLOROBENZIDINE
NA	UG/L	BENZO(A)ANTHRACENE
NA	UG/L	CHRYSENE
NA	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
NA	UG/L	DI-N-OCTYLPHTHALATE
NA	UG/L	BENZO(B)FLUORANTHENE
NA	UG/L	BENZO(K)FLUORANTHENE
NA	UG/L	BENZO-A-PYRENE
NA	UG/L	INDENO (1,2,3-CD) PYRENE
NA	UG/L	DIBENZO(A,H)ANTHRACENE
NA	UG/L	BENZO(GH)PERYLENE

SAMPLE CONTAINER BROKEN WHEN RECEIVED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4814 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SW /

MD No: 0J76

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J76

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:20

Ending:

RESULTS	UNITS	ANALYTE
NA	UG/L	BENZALDEHYDE
NA	UG/L	PHENOL
NA	UG/L	BIS(2-CHLOROETHYL) ETHER
NA	UG/L	2-CHLOROPHENOL
NA	UG/L	2-METHYLPHENOL
NA	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
NA	UG/L	ACETOPHENONE
NA	UG/L	(3-AND/OR 4-)METHYLPHENOL
NA	UG/L	N-NITROSODI-N-PROPYLAMINE
NA	UG/L	HEXACHLOROETHANE
NA	UG/L	NITROBENZENE
NA	UG/L	ISOPHORONE
NA	UG/L	2-NITROPHENOL
NA	UG/L	2,4-DIMETHYLPHENOL
NA	UG/L	BIS(2-CHLOROETHOXY)METHANE
NA	UG/L	2,4-DICHLOROPHENOL
NA	UG/L	NAPHTHALENE
NA	UG/L	4-CHLOROANILINE
NA	UG/L	HEXACHLOROBUTADIENE
NA	UG/L	CAPROLACTAM
NA	UG/L	4-CHLORO-3-METHYLPHENOL
NA	UG/L	2-METHYLNAPHTHALENE
NA	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
NA	UG/L	2,4,6-TRICHLOROPHENOL
NA	UG/L	2,4,5-TRICHLOROPHENOL
NA	UG/L	1,1-BIPHENYL
NA	UG/L	2-CHLORONAPHTHALENE
NA	UG/L	2-NITROANILINE
NA	UG/L	DIMETHYL PHTHALATE
NA	UG/L	2,6-DINITROTOLUENE
NA	UG/L	ACENAPHTHYLENE
NA	UG/L	3-NITROANILINE
NA	UG/L	ACENAPHTHENE
NA	UG/L	2,4-DINITROPHENOL
NA	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
NA	UG/L	DIBENZOFURAN
NA	UG/L	2,4-DINITROTOLUENE
NA	UG/L	DIETHYL PHTHALATE
NA	UG/L	FLUORENE
NA	UG/L	4-CHLOROPHENYL PHENYL ETHER
NA	UG/L	4-NITROANILINE
NA	UG/L	2-METHYL-4,6-DINITROPHENOL
NA	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
NA	UG/L	4-BROMOPHENYL PHENYL ETHER
NA	UG/L	HEXACHLOROBENZENE (HCB)
NA	UG/L	ATRAZINE
NA	UG/L	PENTACHLOROPHENOL
NA	UG/L	PHENANTHRENE
NA	UG/L	ANTHRACENE
NA	UG/L	CARBAZOLE
NA	UG/L	DI-N-BUTYLPHTHALATE
NA	UG/L	FLUORANTHENE
NA	UG/L	PYRENE
NA	UG/L	BENZYL BUTYL PHTHALATE
NA	UG/L	3,3'-DICHLOROBENZIDINE
NA	UG/L	BENZO(A)ANTHRACENE
NA	UG/L	CHRYSENE
NA	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
NA	UG/L	DI-N-OCTYLPHTHALATE
NA	UG/L	BENZO(B)FLUORANTHENE
NA	UG/L	BENZO(K)FLUORANTHENE
NA	UG/L	BENZO-A-PYRENE
NA	UG/L	INDENO (1,2,3-CD) PYRENE
NA	UG/L	DIBENZO(A,H)ANTHRACENE
NA	UG/L	BENZO(GHI)PERYLENE

SAMPLE CONTAINER BROKEN WHEN RECEIVED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4800 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/03/2001 09:15

Id/Station: LC05SW /

MD No: 0J62

Inorg Contractor: SENTIN

Ending:

Media: SURFACE WATER

D No: 0J62

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10UJ	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10UJ	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10UJ	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25UJ	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROBENZENE (HCB)
10UJ	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10UJ	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

Average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

Actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

jc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4800 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SW /

MD No: 0J62

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J62

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

RESULTS	UNITS	ANALYTE
5J	UG/L	2-PROPANOL, 1- (2-METHOXYPROP
7J	UG/L	3 UNKNOWN

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4785 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 10:05

Id/Station: LC08SW /

MD No: 0J47

Inorg Contractor: SENTIN

Ending:

Media: SURFACE WATER

D No: 0J47

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10U	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROBENZENE (HCB)
10U	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4785 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SW /

MD No: 0J47

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J47

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:05

Ending:

RESULTS	UNITS	ANALYTE
3NJ	UG/L	3-PENTEN-2-OL
19NJ	UG/L	3-BUTYL-2-OL, 2-METHYL-
18NJ	UG/L	2-BUTENOIC ACID, 4-NITROPHEN

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
ic indicates that data unusable. compound may or may not be present, resampling and reanalysis is necessary for verification.

Sample 4792 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Programs: SF

Case No: 29099

Beginning: 04/02/2001 12:40

Id/Station: LC09SW /

MD No: 0J54

Inorg Contractor: SENTIN

Ending:

Media: SURFACE WATER

D No: 0J54

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10UJ	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25UJ	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROBENZENE (HCB)
10U	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

/average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

z indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4792 FY 2001 Project: 01-0528

Produced by: McConney, John

## MISCELLANEOUS COMPOUNDS

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 12:40

Id/Station: LC09SW /

MD No: 0J54

Inorg Contractor: SENTIN

Ending:

Media: SURFACE WATER

D No: 0J54

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
8J	UG/L	2.UNKNOWNNS

TA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4818 FY 2001 Project: 01-0528

EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC01SD / MD No: 0J80  
Media: SEDIMENT D No: 0J80

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/03/2001 17:15  
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
590UJ	UG/KG	BENZALDEHYDE
590U	UG/KG	PHENOL
590U	UG/KG	BIS(2-CHLOROETHYL) ETHER
590U	UG/KG	2-CHLOROPHENOL
590U	UG/KG	2-METHYLPHENOL
590UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
590U	UG/KG	ACETOPHENONE
590U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
590U	UG/KG	N-NITROSODI-N-PROPYLAMINE
590U	UG/KG	HEXACHLOROETHANE
590U	UG/KG	NITROBENZENE
590U	UG/KG	ISOPHORONE
590U	UG/KG	2-NITROPHENOL
590U	UG/KG	2,4-DIMETHYLPHENOL
590U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
590U	UG/KG	2,4-DICHLOROPHENOL
590U	UG/KG	NAPHTHALENE
590U	UG/KG	4-CHLOROANILINE
590U	UG/KG	HEXACHLOROBUTADIENE
590U	UG/KG	CAPROLACTAM
590U	UG/KG	4-CHLORO-3-METHYLPHENOL
590U	UG/KG	2-METHYLNAPHTHALENE
590U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
590U	UG/KG	2,4,6-TRICHLOROPHENOL
1500U	UG/KG	2,4,5-TRICHLOROPHENOL
590U	UG/KG	1,1-BIPHENYL
590U	UG/KG	2-CHLORONAPHTHALENE
1500U	UG/KG	2-NITROANILINE
590U	UG/KG	DIMETHYL PHTHALATE
590U	UG/KG	2,6-DINITROTOLUENE
590U	UG/KG	ACENAPHTHYLENE
1500U	UG/KG	3-NITROANILINE
590U	UG/KG	ACENAPHTHENE
1500U	UG/KG	2,4-DINITROPHENOL
1500U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
590U	UG/KG	DIBENZOFURAN
590U	UG/KG	2,4-DINITROTOLUENE
590U	UG/KG	DIETHYL PHTHALATE
590U	UG/KG	FLUORENE
590U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1500U	UG/KG	4-NITROANILINE
1500U	UG/KG	2-METHYL-4,6-DINITROPHENOL
590U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
590UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
590UJ	UG/KG	HEXACHLOROENZENE (HCB)
590U	UG/KG	ATRAZINE
1500UJ	UG/KG	PENTACHLOROPHENOL
590U	UG/KG	PHENANTHRENE
590U	UG/KG	ANTHRACENE
590U	UG/KG	CARBAZOLE
590U	UG/KG	DI-N-BUTYL PHTHALATE
590U	UG/KG	FLUORANTHENE
590U	UG/KG	PYRENE
590U	UG/KG	BENZYL BUTYL PHTHALATE
590U	UG/KG	3,3'-DICHLOROBENZIDINE
590U	UG/KG	BENZO(A)ANTHRACENE
590U	UG/KG	CHRYSENE
590U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
590U	UG/KG	DI-N-OCTYL PHTHALATE
590U	UG/KG	BENZO(B)FLUORANTHENE
590U	UG/KG	BENZO(K)FLUORANTHENE
590U	UG/KG	BENZO-A-PYRENE
590U	UG/KG	INDENO (1,2,3-CD) PYRENE
590U	UG/KG	DIBENZO(A,H)ANTHRACENE
590U	UG/KG	BENZO(GHI)PERYLENE
45	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected: the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4818 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC01SD /

Media: SEDIMENT

Case No: 29099

MD No: 0J80

D No: 0J80

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

RESULTS	UNITS	ANALYTE
4200J	UG/KG	7 UNKNOWN
150NJ	UG/KG	TETRADECANOIC ACID
180JN	UG/KG	UNKNOWN ORGANIC ACID
360NJ	UG/KG	OXACYCLOHEPTADECAN-2-ONE
640NJ	UG/KG	HEXADECANOIC ACID
160NJ	UG/KG	5,8,11-HEPTADECATRIEN-1-OL
290NJ	UG/KG	OLEIC ACID
150NJ	UG/KG	CETYLPYRIDINIUM CHLORIDE
240JN	UG/KG	UNKNOWN AMIDE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4799 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Program: SF

Case No: 29099

Beginning: 04/02/2001 17:30

Id/Station: LC02SD /

MD No: 0J61

Inorg Contractor: SENTIN

Ending:

Media: SEDIMENT

D No: 0J61

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2400UJ	UG/KG	BENZALDEHYDE
2400U	UG/KG	PHENOL
2400U	UG/KG	BIS(2-CHLOROETHYL) ETHER
2400U	UG/KG	2-CHLOROPHENOL
2400U	UG/KG	2-METHYLPHENOL
2400UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
2400U	UG/KG	ACETOPHENONE
2400U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
2400U	UG/KG	N-NITROSODI-N-PROPYLAMINE
2400U	UG/KG	HEXACHLOROETHANE
2400U	UG/KG	NITROBENZENE
2400U	UG/KG	ISOPHORONE
2400U	UG/KG	2-NITROPHENOL
2400U	UG/KG	2,4-DIMETHYLPHENOL
2400U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
2400U	UG/KG	2,4-DICHLOROPHENOL
2400U	UG/KG	NAPHTHALENE
2400U	UG/KG	4-CHLOROANILINE
2400U	UG/KG	HEXACHLOROBUTADIENE
2400U	UG/KG	CAPROLACTAM
2400U	UG/KG	4-CHLORO-3-METHYLPHENOL
2400U	UG/KG	2-METHYLNAPHTHALENE
2400U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
2400U	UG/KG	2,4,6-TRICHLOROPHENOL
6000U	UG/KG	2,4,5-TRICHLOROPHENOL
2400U	UG/KG	1,1-BIPHENYL
2400U	UG/KG	2-CHLORONAPHTHALENE
6000U	UG/KG	2-NITROANILINE
2400U	UG/KG	DIMETHYL PHTHALATE
2400U	UG/KG	2,6-DINITROTOLUENE
2400U	UG/KG	ACENAPHTHYLENE
6000U	UG/KG	3-NITROANILINE
2400U	UG/KG	ACENAPHTHENE
6000U	UG/KG	2,4-DINITROPHENOL
6000U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
2400U	UG/KG	DIBENZOFURAN
2400U	UG/KG	2,4-DINITROTOLUENE
2400U	UG/KG	DIETHYL PHTHALATE
2400U	UG/KG	FLUORENE
2400U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
6000U	UG/KG	4-NITROANILINE
6000U	UG/KG	2-METHYL-4,6-DINITROPHENOL
2400U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
2400UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
2400UJ	UG/KG	HEXACHLOROBENZENE (HCB)
2400U	UG/KG	ATRAZINE
6000UJ	UG/KG	PENTACHLOROPHENOL
2400U	UG/KG	PHENANTHRENE
2400U	UG/KG	ANTHRACENE
2400U	UG/KG	CARBAZOLE
2400U	UG/KG	DI-N-BUTYLPHTHALATE
500J	UG/KG	FLUORANTHENE
490J	UG/KG	PYRENE
2400U	UG/KG	BENZYL BUTYL PHTHALATE
2400U	UG/KG	3,3'-DICHLOROBENZIDINE
320J	UG/KG	BENZO(A)ANTHRACENE
400J	UG/KG	CHRYSENE
2400U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
2400U	UG/KG	DI-N-OCTYLPHTHALATE
340J	UG/KG	BENZO(B)FLUORANTHENE
350J	UG/KG	BENZO(K)FLUORANTHENE
2400U	UG/KG	BENZO-A-PYRENE
2400U	UG/KG	INDENO (1,2,3-CD) PYRENE
2400U	UG/KG	DIBENZO(A,H)ANTHRACENE
2400U	UG/KG	BENZO(GH)PERYLENE
32	%	% MOISTURE

Average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

U indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4799 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SD /

MD No: 0J61

Media: SEDIMENT

D No: 0J61

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:30

Ending:

RESULTS	UNITS	ANALYTE
13000J	UG/KG	10 UNKNOWN
550NJ	UG/KG	STANNANE, BROMOTRIBUTYL-
1000NJ	UG/KG	HEXADECANOIC ACID

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

jc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4798 FY 2001 Project: 01-0528

EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC03SD / MD No: 0J60  
Media: SEDIMENT D No: 0J60

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/02/2001 17:55  
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4000UJ	UG/KG	BENZALDEHYDE
4000U	UG/KG	PHENOL
4000U	UG/KG	BIS(2-CHLOROETHYL) ETHER
4000U	UG/KG	2-CHLOROPHENOL
4000U	UG/KG	2-METHYLPHENOL
4000UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
4000U	UG/KG	ACETOPHENONE
4000U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
4000U	UG/KG	N-NITROSODI-N-PROPYLAMINE
4000U	UG/KG	HEXACHLOROETHANE
4000U	UG/KG	NITROBENZENE
4000U	UG/KG	ISOPHORONE
4000U	UG/KG	2-NITROPHENOL
4000U	UG/KG	2,4-DIMETHYLPHENOL
4000U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
4000U	UG/KG	2,4-DICHLOROPHENOL
4000U	UG/KG	NAPHTHALENE
4000U	UG/KG	4-CHLOROANILINE
4000U	UG/KG	HEXACHLOROBUTADIENE
4000U	UG/KG	CAPROLACTAM
4000U	UG/KG	4-CHLORO-3-METHYLPHENOL
4000U	UG/KG	2-METHYLNAPHTHALENE
4000U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
4000U	UG/KG	2,4,6-TRICHLOROPHENOL
9900U	UG/KG	2,4,5-TRICHLOROPHENOL
4000U	UG/KG	1,1-BIPHENYL
4000U	UG/KG	2-CHLORONAPHTHALENE
9900UJ	UG/KG	2-NITROANILINE
4000U	UG/KG	DIMETHYL PHTHALATE
4000U	UG/KG	2,6-DINITROTOLUENE
4000U	UG/KG	ACENAPHTHYLENE
9900U	UG/KG	3-NITROANILINE
4000U	UG/KG	ACENAPHTHENE
9900U	UG/KG	2,4-DINITROPHENOL
9900U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
4000U	UG/KG	DIBENZOFURAN
4000U	UG/KG	2,4-DINITROTOLUENE
4000U	UG/KG	DIETHYL PHTHALATE
4000U	UG/KG	FLUORENE
4000U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
9900U	UG/KG	4-NITROANILINE
9900U	UG/KG	2-METHYL-4,6-DINITROPHENOL
4000U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
4000U	UG/KG	4-BROMOPHENYL PHENYL ETHER
4000U	UG/KG	HEXACHLOROBENZENE (HCB)
4000U	UG/KG	ATRAZINE
9900U	UG/KG	PENTACHLOROPHENOL
4000U	UG/KG	PHENANTHRENE
4000U	UG/KG	ANTHRACENE
4000U	UG/KG	CARBAZOLE
4000U	UG/KG	DI-N-BUTYLPHTHALATE
4000U	UG/KG	FLUORANTHENE
4000U	UG/KG	PYRENE
4000U	UG/KG	BENZYL BUTYL PHTHALATE
4000U	UG/KG	3,3'-DICHLOROBENZIDINE
4000U	UG/KG	BENZO(A)ANTHRACENE
4000U	UG/KG	CHRYSENE
4000U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
4000U	UG/KG	DI-N-OCTYLPHTHALATE
4000U	UG/KG	BENZO(B)FLUORANTHENE
4000UJ	UG/KG	BENZO(K)FLUORANTHENE
4000U	UG/KG	BENZO-A-PYRENE
4000U	UG/KG	INDENO (1,2,3-CD) PYRENE
4000U	UG/KG	DIBENZO(A,H)ANTHRACENE
4000U	UG/KG	BENZO(GHI)PERYLENE
59	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4798 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SD /

MD No: 0J60

Media: SEDIMENT

D No: 0J60

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:55

Ending:

RESULTS	UNITS	ANALYTE
24000J	UG/KG	8 UNKNOWN
980NJ	UG/KG	TETRADECANOIC ACID
1500NJ	UG/KG	HEXADECANOIC ACID, METHYL ES
8900NJ	UG/KG	HEXADECANOIC ACID
1400NJ	UG/KG	OXACYCLOHEXADECAN-2-ONE
3300NJ	UG/KG	CHOLESTEROL
2500NJ	UG/KG	D-FRIEDOOLEAN-14-EN-3-ONE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4797 FY 2001 Project: 01-0528

EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC04SD / MD No: 0J59  
Media: SEDIMENT D No: 0J59

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/02/2001 18:20  
Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2700UJ	UG/KG	BENZALDEHYDE
2700U	UG/KG	PHENOL
2700U	UG/KG	BIS(2-CHLOROETHYL) ETHER
2700U	UG/KG	2-CHLOROPHENOL
2700U	UG/KG	2-METHYLPHENOL
2700UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
2700U	UG/KG	ACETOPHENONE
2700U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
2700U	UG/KG	N-NITROSODI-N-PROPYLAMINE
2700U	UG/KG	HEXACHLOROETHANE
2700U	UG/KG	NITROBENZENE
2700U	UG/KG	ISOPHORONE
2700U	UG/KG	2-NITROPHENOL
2700U	UG/KG	2,4-DIMETHYLPHENOL
2700U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
2700U	UG/KG	2,4-DICHLOROPHENOL
2700U	UG/KG	NAPHTHALENE
2700U	UG/KG	4-CHLOROANILINE
2700U	UG/KG	HEXACHLOROBUTADIENE
2700U	UG/KG	CAPROLACTAM
2700U	UG/KG	4-CHLORO-3-METHYLPHENOL
2700U	UG/KG	2-METHYLNAPHTHALENE
2700U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
2700U	UG/KG	2,4,6-TRICHLOROPHENOL
6700U	UG/KG	2,4,5-TRICHLOROPHENOL
2700U	UG/KG	1,1-BIPHENYL
2700U	UG/KG	2-CHLORONAPHTHALENE
6700UJ	UG/KG	2-NITROANILINE
2700U	UG/KG	DIMETHYL PHTHALATE
2700U	UG/KG	2,6-DINITROTOLUENE
2700U	UG/KG	ACENAPHTHYLENE
6700U	UG/KG	3-NITROANILINE
2700U	UG/KG	ACENAPHTHENE
6700U	UG/KG	2,4-DINITROPHENOL
6700U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
2700U	UG/KG	DIBENZOFURAN
2700U	UG/KG	2,4-DINITROTOLUENE
2700U	UG/KG	DIETHYL PHTHALATE
2700U	UG/KG	FLUORENE
2700U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
6700U	UG/KG	4-NITROANILINE
6700U	UG/KG	2-METHYL-4,6-DINITROPHENOL
2700U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
2700U	UG/KG	4-BROMOPHENYL PHENYL ETHER
2700U	UG/KG	HEXACHLOROBENZENE (HCB)
2700U	UG/KG	ATRAZINE
6700U	UG/KG	PENTACHLOROPHENOL
600J	UG/KG	PHENANTHRENE
2700U	UG/KG	ANTHRACENE
2700U	UG/KG	CARBAZOLE
2700U	UG/KG	DI-N-BUTYLPHTHALATE
850J	UG/KG	FLUORANTHENE
750J	UG/KG	PYRENE
2700U	UG/KG	BENZYL BUTYL PHTHALATE
2700U	UG/KG	3,3'-DICHLOROBENZIDINE
380J	UG/KG	BENZO(A)ANTHRACENE
480J	UG/KG	CHRYSENE
2700U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
2700U	UG/KG	DI-N-OCTYLPHTHALATE
420J	UG/KG	BENZO(B)FLUORANTHENE
300J	UG/KG	BENZO(K)FLUORANTHENE
2700U	UG/KG	BENZO-A-PYRENE
2700U	UG/KG	INDENO (1,2,3-CD) PYRENE
2700U	UG/KG	DIBENZO(A,H)ANTHRACENE
2700U	UG/KG	BENZO(GH)PERYLENE
39	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4797 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Programs: SF

Id/Station: LC04SD /

Media: SEDIMENT

Case No: 29099

MD No: 0J59

D No: 0J59

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 18:20.

Ending:

RESULTS	UNITS	ANALYTE
16000J	UG/KG	10 UNKNOWN
800NJ	UG/KG	PHENOL, P-TERT-BUTYL-
990NJ	UG/KG	HEXADECANOIC ACID, METHYL ES
4600NJ	UG/KG	HEXADECANOIC ACID

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4815 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SD /

MD No: 0J77

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J77

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
770UJ	UG/KG	BENZALDEHYDE
770U	UG/KG	PHENOL
770U	UG/KG	BIS(2-CHLOROETHYL) ETHER
770U	UG/KG	2-CHLOROPHENOL
770U	UG/KG	2-METHYLPHENOL
770UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
770U	UG/KG	ACETOPHENONE
770U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
770U	UG/KG	N-NITROSODI-N-PROPYLAMINE
770U	UG/KG	HEXACHLOROETHANE
770U	UG/KG	NITROBENZENE
770U	UG/KG	ISOPHORONE
770U	UG/KG	2-NITROPHENOL
770U	UG/KG	2,4-DIMETHYLPHENOL
770U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
770U	UG/KG	2,4-DICHLOROPHENOL
770U	UG/KG	NAPHTHALENE
770U	UG/KG	4-CHLOROANILINE
770U	UG/KG	HEXACHLOROBUTADIENE
770U	UG/KG	CAPROLACTAM
770U	UG/KG	4-CHLORO-3-METHYLPHENOL
770U	UG/KG	2-METHYLNAPHTHALENE
770U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
770U	UG/KG	2,4,6-TRICHLOROPHENOL
1900U	UG/KG	2,4,5-TRICHLOROPHENOL
770U	UG/KG	1,1-BIPHENYL
770U	UG/KG	2-CHLORONAPHTHALENE
1900U	UG/KG	2-NITROANILINE
770U	UG/KG	DIMETHYL PHTHALATE
770U	UG/KG	2,6-DINITROTOLUENE
770U	UG/KG	ACENAPHTHYLENE
1900U	UG/KG	3-NITROANILINE
770U	UG/KG	ACENAPHTHENE
1900U	UG/KG	2,4-DINITROPHENOL
1900U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
770U	UG/KG	DIBENZOFURAN
770U	UG/KG	2,4-DINITROTOLUENE
770U	UG/KG	DIETHYL PHTHALATE
770U	UG/KG	FLUORENE
770U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1900U	UG/KG	4-NITROANILINE
1900U	UG/KG	2-METHYL-4,6-DINITROPHENOL
770U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
770UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
770UJ	UG/KG	HEXACHLOROBENZENE (HCB)
770U	UG/KG	ATRAZINE
1900UJ	UG/KG	PENTACHLOROPHENOL
770U	UG/KG	PHENANTHRENE
770U	UG/KG	ANTHRACENE
770U	UG/KG	CARBAZOLE
770U	UG/KG	DI-N-BUTYLPHTHALATE
770U	UG/KG	FLUORANTHENE
770U	UG/KG	PYRENE
770U	UG/KG	BENZYL BUTYL PHTHALATE
770U	UG/KG	3,3'-DICHLOROBENZIDINE
770U	UG/KG	BENZO(A)ANTHRACENE
770U	UG/KG	CHRYSENE
770U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
770U	UG/KG	DI-N-OCTYLPHTHALATE
770U	UG/KG	BENZO(B)FLUORANTHENE
770U	UG/KG	BENZO(K)FLUORANTHENE
770U	UG/KG	BENZO-A-PYRENE
770U	UG/KG	INDENO (1,2,3-CD) PYRENE
770U	UG/KG	DIBENZO(A,H)ANTHRACENE
770U	UG/KG	BENZO(GH)PERYLENE
58	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4815 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA  
Program: SF Case No: 29099  
Id/Station: LC05SD / MD No: 0J77  
Media: SEDIMENT D No: 0J77

Produced by: McConney, John  
Requestor:  
Project Leader: CKING  
Beginning: 04/03/2001 15:05  
Ending:

Inorg Contractor: SENTIN  
Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
15000J	UG/KG	12 UNKNOWN
240NJ	UG/KG	TETRADECANOIC ACID
710NJ	UG/KG	9-HEXADECENOIC ACID
730NJ	UG/KG	PENTADECANOIC ACID

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

1-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4809 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC-00-SD-000 MD No: 0J71

Media: SEDIMENT see pool, No. 1, P. 24 D No: 0J71

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 12:30 actually LC-00-SD

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1000UJ	UG/KG	BENZALDEHYDE
1000U	UG/KG	PHENOL
1000U	UG/KG	BIS(2-CHLOROETHYL) ETHER
1000U	UG/KG	2-CHLOROPHENOL
1000U	UG/KG	2-METHYLPHENOL
1000UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
1000U	UG/KG	ACETOPHENONE
1000U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
1000U	UG/KG	N-NITROSODI-N-PROPYLAMINE
1000U	UG/KG	HEXACHLOROETHANE
1000U	UG/KG	NITROBENZENE
1000U	UG/KG	ISOPHORONE
1000U	UG/KG	2-NITROPHENOL
1000U	UG/KG	2,4-DIMETHYLPHENOL
1000U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
1000U	UG/KG	2,4-DICHLOROPHENOL
1000U	UG/KG	NAPHTHALENE
1000U	UG/KG	4-CHLOROANILINE
1000U	UG/KG	HEXACHLOROBUTADIENE
1000U	UG/KG	CAPROLACTAM
1000U	UG/KG	4-CHLORO-3-METHYLPHENOL
1000U	UG/KG	2-METHYLNAPHTHALENE
1000U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
1000U	UG/KG	2,4,6-TRICHLOROPHENOL
2500U	UG/KG	2,4,5-TRICHLOROPHENOL
1000U	UG/KG	1,1-BIPHENYL
1000U	UG/KG	2-CHLORONAPHTHALENE
2500U	UG/KG	2-NITROANILINE
1000U	UG/KG	DIMETHYL PHTHALATE
1000U	UG/KG	2,6-DINITROTOLUENE
1000U	UG/KG	ACENAPHTHYLENE
2500U	UG/KG	3-NITROANILINE
1000U	UG/KG	ACENAPHTHENE
2500U	UG/KG	2,4-DINITROPHENOL
2500U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
1000U	UG/KG	DIBENZOFURAN
1000U	UG/KG	2,4-DINITROTOLUENE
1000U	UG/KG	DIETHYL PHTHALATE
1000U	UG/KG	FLUORENE
1000U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
2500U	UG/KG	4-NITROANILINE
2500U	UG/KG	2-METHYL-4,6-DINITROPHENOL
1000U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
1000U	UG/KG	4-BROMOPHENYL PHENYL ETHER
1000U	UG/KG	HEXACHLOROBENZENE (HCB)
1000U	UG/KG	ATRAZINE
2500U	UG/KG	PENTACHLOROPHENOL
170J	UG/KG	PHENANTHRENE
1000U	UG/KG	ANTHRACENE
1000U	UG/KG	CARBAZOLE
1000U	UG/KG	DI-N-BUTYLPHTHALATE
280J	UG/KG	FLUORANTHENE
230J	UG/KG	PYRENE
1000U	UG/KG	BENZYL BUTYL PHTHALATE
1000U	UG/KG	3,3'-DICHLOROBENZIDINE
1000U	UG/KG	BENZO(A)ANTHRACENE
140J	UG/KG	CHRYSENE
1000U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
1000U	UG/KG	DI-N-OCTYLPHTHALATE
110J	UG/KG	BENZO(B)FLUORANTHENE
100J	UG/KG	BENZO(K)FLUORANTHENE
1000U	UG/KG	BENZO-A-PYRENE
1000U	UG/KG	INDENO (1,2,3-CD) PYRENE
1000U	UG/KG	DIBENZO(A,H)ANTHRACENE
1000UJ	UG/KG	BENZO(GH)PERYLENE
68	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4809 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: ~~LC-06-5D~~ LC-06-5D #44  
(see Logbook No. 1  
p. 24.)

MD No: 0J71

D No: 0J71

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 12:30

Ending:

RESULTS	UNITS	ANALYTE
17000J	UG/KG	18 UNKNOWNNS
850NJ	UG/KG	TETRADECANOIC ACID
1500JN	UG/KG	UNKNOWN FATTY ACID
250NJ	UG/KG	11-HEXADECENOIC ACID, METHYL
370NJ	UG/KG	HEXADECANOIC ACID, METHYL ES
1500NJ	UG/KG	OXACYCLOHEXADECAN-2-ONE, 16
1800NJ	UG/KG	HEXADECANOIC ACID
360NJ	UG/KG	PHYTOL
930NJ	UG/KG	OLEIC ACID
340NJ	UG/KG	9-OCTADECENAMIDE, (Z)-
1100NJ	UG/KG	CHOLESTEROL
2200NJ	UG/KG	D-FRIEDOOLEAN-14-EN-3-ONE
2700NJ	UG/KG	LUP-20 (29) -EN-3-ONE

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4810 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SD /

MD No: 0J72

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J72

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 13:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
570UJ	UG/KG	BENZALDEHYDE
570U	UG/KG	PHENOL
570U	UG/KG	BIS(2-CHLOROETHYL) ETHER
570U	UG/KG	2-CHLOROPHENOL
570U	UG/KG	2-METHYLPHENOL
570UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
570U	UG/KG	ACETOPHENONE
570U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
570U	UG/KG	N-NITROSODI-N-PROPYLAMINE
570U	UG/KG	HEXACHLOROETHANE
570U	UG/KG	NITROBENZENE
570U	UG/KG	ISOPHORONE
570U	UG/KG	2-NITROPHENOL
570U	UG/KG	2,4-DIMETHYLPHENOL
570U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
570U	UG/KG	2,4-DICHLOROPHENOL
570U	UG/KG	NAPHTHALENE
570U	UG/KG	4-CHLOROANILINE
570U	UG/KG	HEXACHLOROBUTADIENE
570U	UG/KG	CAPROLACTAM
570U	UG/KG	4-CHLORO-3-METHYLPHENOL
570U	UG/KG	2-METHYLNAPHTHALENE
570U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
570U	UG/KG	2,4,6-TRICHLOROPHENOL
1400U	UG/KG	2,4,5-TRICHLOROPHENOL
570U	UG/KG	1,1-BIPHENYL
570U	UG/KG	2-CHLORONAPHTHALENE
1400U	UG/KG	2-NITROANILINE
570U	UG/KG	DIMETHYL PHTHALATE
570U	UG/KG	2,6-DINITROTOLUENE
570U	UG/KG	ACENAPHTHYLENE
1400U	UG/KG	3-NITROANILINE
570U	UG/KG	ACENAPHTHENE
1400U	UG/KG	2,4-DINITROPHENOL
1400U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
570U	UG/KG	DIBENZOFURAN
570U	UG/KG	2,4-DINITROTOLUENE
570U	UG/KG	DIETHYL PHTHALATE
570U	UG/KG	FLUORENE
570U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1400U	UG/KG	4-NITROANILINE
1400U	UG/KG	2-METHYL-4,6-DINITROPHENOL
570U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
570U	UG/KG	4-BROMOPHENYL PHENYL ETHER
570U	UG/KG	HEXACHLOROBENZENE (HCB)
570U	UG/KG	ATRAZINE
1400U	UG/KG	PENTACHLOROPHENOL
570U	UG/KG	PHENANTHRENE
570U	UG/KG	ANTHRACENE
570U	UG/KG	CARBAZOLE
570U	UG/KG	DI-N-BUTYLPHTHALATE
570U	UG/KG	FLUORANTHENE
570U	UG/KG	PYRENE
570U	UG/KG	BENZYL BUTYL PHTHALATE
570U	UG/KG	3,3'-DICHLOROBENZIDINE
570U	UG/KG	BENZO(A)ANTHRACENE
570U	UG/KG	CHRYSENE
570U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
570U	UG/KG	DI-N-OCTYLPHTHALATE
570U	UG/KG	BENZO(B)FLUORANTHENE
570U	UG/KG	BENZO(K)FLUORANTHENE
570U	UG/KG	BENZO-A-PYRENE
570U	UG/KG	INDENO (1,2,3-CD) PYRENE
570U	UG/KG	DIBENZO(A,H)ANTHRACENE
570UJ	UG/KG	BENZO(GH)PERYLENE
43	%	% MOISTURE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4810 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SD /

MD No: 0J72

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J72

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 13:00

Ending:

RESULTS	UNITS	ANALYTE
4500J	UG/KG	12 UNKNOWNNS
210NJ	UG/KG	HEXADECANOIC ACID
260NJ	UG/KG	9-OCTADECENAMIDE, (Z)-

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4786 FY 2001 Project: 01-0528

Produced by: McConney, John

EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co Thunderbolt, GA

Project Leader: CKING

Program: SF Case No: 29099

Beginning: 04/02/2001 10:20

Id/Station: LC08SD / MD No: 0J48

Inorg Contractor: SENTIN

Ending:

Media: SEDIMENT D No: 0J48

Org Contractor: CEIMIC

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3300UJ	UG/KG	BENZALDEHYDE
3300U	UG/KG	PHENOL
3300UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
3300U	UG/KG	2-CHLOROPHENOL
3300U	UG/KG	2-METHYLPHENOL
3300UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
3300U	UG/KG	ACETOPHENONE
3300U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
3300U	UG/KG	N-NITROSODI-N-PROPYLAMINE
3300U	UG/KG	HEXACHLOROETHANE
3300U	UG/KG	NITROBENZENE
3300U	UG/KG	ISOPHORONE
3300U	UG/KG	2-NITROPHENOL
3300U	UG/KG	2,4-DIMETHYLPHENOL
3300U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
3300U	UG/KG	2,4-DICHLOROPHENOL
3300U	UG/KG	NAPHTHALENE
3300U	UG/KG	4-CHLOROANILINE
3300U	UG/KG	HEXACHLOROBUTADIENE
3300U	UG/KG	CAPROLACTAM
3300U	UG/KG	4-CHLORO-3-METHYLPHENOL
3300U	UG/KG	2-METHYLNAPHTHALENE
3300U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
3300U	UG/KG	2,4,6-TRICHLOROPHENOL
8200U	UG/KG	2,4,5-TRICHLOROPHENOL
3300U	UG/KG	1,1-BIPHENYL
3300U	UG/KG	2-CHLORONAPHTHALENE
8200UJ	UG/KG	2-NITROANILINE
3300U	UG/KG	DIMETHYL PHTHALATE
3300U	UG/KG	2,6-DINITROTOLUENE
3300U	UG/KG	ACENAPHTHYLENE
8200U	UG/KG	3-NITROANILINE
3300U	UG/KG	ACENAPHTHENE
8200U	UG/KG	2,4-DINITROPHENOL
8200U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
3300U	UG/KG	DIBENZOFURAN
3300U	UG/KG	2,4-DINITROTOLUENE
3300U	UG/KG	DIETHYL PHTHALATE
3300U	UG/KG	FLUORENE
3300U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
8200U	UG/KG	4-NITROANILINE
8200U	UG/KG	2-METHYL-4,6-DINITROPHENOL
3300U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
3300U	UG/KG	4-BROMOPHENYL PHENYL ETHER
3300U	UG/KG	HEXACHLOROENZENE (HCB)
3300U	UG/KG	ATRAZINE
8200U	UG/KG	PENTACHLOROPHENOL
3300U	UG/KG	PHENANTHRENE
3300U	UG/KG	ANTHRACENE
3300U	UG/KG	CARBAZOLE
3300U	UG/KG	DI-N-BUTYLPHTHALATE
3300U	UG/KG	FLUORANTHENE
3300U	UG/KG	PYRENE
3300UJ	UG/KG	BENZYL BUTYL PHTHALATE
3300U	UG/KG	3,3'-DICHLOROBENZIDINE
3300U	UG/KG	BENZO(A)ANTHRACENE
3300U	UG/KG	CHRYSENE
3300U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
3300U	UG/KG	DI-N-OCTYLPHTHALATE
3300U	UG/KG	BENZO(B)FLUORANTHENE
3300U	UG/KG	BENZO(K)FLUORANTHENE
3300U	UG/KG	BENZO-A-PYRENE
3300U	UG/KG	INDENO (1,2,3-CD) PYRENE
3300U	UG/KG	DIBENZO(A,H)ANTHRACENE
3300U	UG/KG	BENZO(GH)PERYLENE
80	%	% MOISTURE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
ctual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4786 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SD /

MD No: 0J48

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J48

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:20

Ending:

RESULTS	UNITS	ANALYTE
28000J	UG/KG	13 UNKNOWN
1800NJ	UG/KG	TETRADECANOIC ACID
2400NJ	UG/KG	9-HEXADECENOIC ACID
770NJ	UG/KG	PHYTOL
1100JN	UG/KG	UNKNOWN AMIDE
2000JN	UG/KG	UNKNOWN STEROID

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4793 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SD /

MD No: 0J55

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J55

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 13:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6100UJ	UG/KG	BENZALDEHYDE
6100U	UG/KG	PHENOL
6100UJ	UG/KG	BIS(2-CHLOROETHYL) ETHER
6100U	UG/KG	2-CHLOROPHENOL
6100U	UG/KG	2-METHYLPHENOL
6100UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
6100U	UG/KG	ACETOPHENONE
6100U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
6100U	UG/KG	N-NITROSODI-N-PROPYLAMINE
6100U	UG/KG	HEXACHLOROETHANE
6100U	UG/KG	NITROBENZENE
6100U	UG/KG	ISOPHORONE
6100U	UG/KG	2-NITROPHENOL
6100U	UG/KG	2,4-DIMETHYLPHENOL
6100U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
6100U	UG/KG	2,4-DICHLOROPHENOL
6100U	UG/KG	NAPHTHALENE
6100U	UG/KG	4-CHLOROANILINE
6100U	UG/KG	HEXACHLOROBUTADIENE
6100U	UG/KG	CAPROLACTAM
6100U	UG/KG	4-CHLORO-3-METHYLPHENOL
6100U	UG/KG	2-METHYLNAPHTHALENE
6100U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
6100U	UG/KG	2,4,6-TRICHLOROPHENOL
15000U	UG/KG	2,4,5-TRICHLOROPHENOL
6100U	UG/KG	1,1-BIPHENYL
6100U	UG/KG	2-CHLORONAPHTHALENE
15000UJ	UG/KG	2-NITROANILINE
6100U	UG/KG	DIMETHYL PHTHALATE
6100U	UG/KG	2,6-DINITROTOLUENE
6100U	UG/KG	ACENAPHTHYLENE
15000U	UG/KG	3-NITROANILINE
6100U	UG/KG	ACENAPHTHENE
15000U	UG/KG	2,4-DINITROPHENOL
15000U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
6100U	UG/KG	DIBENZOFURAN
6100U	UG/KG	2,4-DINITROTOLUENE
6100U	UG/KG	DIETHYL PHTHALATE
6100U	UG/KG	FLUORENE
6100U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
15000U	UG/KG	4-NITROANILINE
15000U	UG/KG	2-METHYL-4,6-DINITROPHENOL
6100U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
6100U	UG/KG	4-BROMOPHENYL PHENYL ETHER
6100U	UG/KG	HEXACHLOROBENZENE (HCB)
6100U	UG/KG	ATRAZINE
15000U	UG/KG	PENTACHLOROPHENOL
6100U	UG/KG	PHENANTHRENE
6100U	UG/KG	ANTHRACENE
6100U	UG/KG	CARBAZOLE
6100U	UG/KG	DI-N-BUTYLPHTHALATE
6100U	UG/KG	FLUORANTHENE
6100U	UG/KG	PYRENE
6100UJ	UG/KG	BENZYL BUTYL PHTHALATE
6100U	UG/KG	3,3'-DICHLOROBENZIDINE
6100U	UG/KG	BENZO(A)ANTHRACENE
6100U	UG/KG	CHRYSENE
6100U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
6100U	UG/KG	DI-N-OCTYLPHTHALATE
6100U	UG/KG	BENZO(B)FLUORANTHENE
6100U	UG/KG	BENZO(K)FLUORANTHENE
6100U	UG/KG	BENZO-A-PYRENE
6100U	UG/KG	INDENO (1,2,3-CD) PYRENE
6100U	UG/KG	DIBENZO(A,H)ANTHRACENE
6100U	UG/KG	BENZO(GH)PERYLENE
73	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

ic indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4793 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SD /

MD No: 0J55

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J55

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 13:00

Ending:

RESULTS	UNITS	ANALYTE
25000J	UG/KG	10 UNKNOWNNS
1300NJ	UG/KG	HEXADECANOIC ACID
2000NJ	UG/KG	CHOLESTEROL

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
jc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4794 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC10SD / MD No: 0J56

Media: SEDIMENT D No: 0J56

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
460UJ	UG/KG	BENZALDEHYDE
460U	UG/KG	PHENOL
460U	UG/KG	BIS(2-CHLOROETHYL) ETHER
460U	UG/KG	2-CHLOROPHENOL
460U	UG/KG	2-METHYLPHENOL
460UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
460U	UG/KG	ACETOPHENONE
460U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
460U	UG/KG	N-NITROSODI-N-PROPYLAMINE
460U	UG/KG	HEXACHLOROETHANE
460U	UG/KG	NITROBENZENE
460U	UG/KG	ISOPHORONE
460U	UG/KG	2-NITROPHENOL
460U	UG/KG	2,4-DIMETHYLPHENOL
460U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
460U	UG/KG	2,4-DICHLOROPHENOL
460U	UG/KG	NAPHTHALENE
460U	UG/KG	4-CHLOROANILINE
460U	UG/KG	HEXACHLOROBUTADIENE
460U	UG/KG	CAPROLACTAM
460U	UG/KG	4-CHLORO-3-METHYLPHENOL
460U	UG/KG	2-METHYLNAPHTHALENE
460U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
460U	UG/KG	2,4,6-TRICHLOROPHENOL
1200U	UG/KG	2,4,5-TRICHLOROPHENOL
460U	UG/KG	1,1-BIPHENYL
460U	UG/KG	2-CHLORONAPHTHALENE
1200UJ	UG/KG	2-NITROANILINE
460U	UG/KG	DIMETHYL PHTHALATE
460U	UG/KG	2,6-DINITROTOLUENE
460U	UG/KG	ACENAPHTHYLENE
1200U	UG/KG	3-NITROANILINE
460U	UG/KG	ACENAPHTHENE
1200U	UG/KG	2,4-DINITROPHENOL
1200U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
460U	UG/KG	DIBENZOFURAN
460U	UG/KG	2,4-DINITROTOLUENE
460U	UG/KG	DIETHYL PHTHALATE
460U	UG/KG	FLUORENE
460U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1200U	UG/KG	4-NITROANILINE
1200U	UG/KG	2-METHYL-4,6-DINITROPHENOL
460U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
460U	UG/KG	4-BROMOPHENYL PHENYL ETHER
460U	UG/KG	HEXACHLOROBENZENE (HCB)
460U	UG/KG	ATRAZINE
1200U	UG/KG	PENTACHLOROPHENOL
460U	UG/KG	PHENANTHRENE
460U	UG/KG	ANTHRACENE
460U	UG/KG	CARBAZOLE
460U	UG/KG	DI-N-BUTYLPHTHALATE
49J	UG/KG	FLUORANTHENE
50J	UG/KG	PYRENE
460U	UG/KG	BENZYL BUTYL PHTHALATE
460U	UG/KG	3,3'-DICHLOROBENZIDINE
460U	UG/KG	BENZO(A)ANTHRACENE
460U	UG/KG	CHRYSENE
460U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
460U	UG/KG	DI-N-OCTYLPHTHALATE
460U	UG/KG	BENZO(B)FLUORANTHENE
460UJ	UG/KG	BENZO(K)FLUORANTHENE
460U	UG/KG	BENZO-A-PYRENE
460U	UG/KG	INDENO (1,2,3-CD) PYRENE
460U	UG/KG	DIBENZO(A,H)ANTHRACENE
460U	UG/KG	BENZO(GH)PERYLENE
30	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

jc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4794 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC10SD /

MD No: 0J56

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J56

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:00

Ending:

RESULTS	UNITS	ANALYTE
3300J	UG/KG	10 UNKNOWNNS
110NJ	UG/KG	DODECANOIC ACID, 10-METHYL-
850NJ	UG/KG	HEXADECANOIC ACID
240NJ	UG/KG	CHOLEST-5-EN-E-OL (3.BETA.)-
300NJ	UG/KG	4,7-METHANOAZULENE, DECAHYDR

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4807 FY 2001 Project: 01-0528

EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC11SD / MD No: 0J69

Media: SEDIMENT D No: 0J69

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:45

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
410UJ	UG/KG	BENZALDEHYDE
410U	UG/KG	PHENOL
410U	UG/KG	BIS(2-CHLOROETHYL) ETHER
410U	UG/KG	2-CHLOROPHENOL
410U	UG/KG	2-METHYLPHENOL
410UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
410U	UG/KG	ACETOPHENONE
410U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
410U	UG/KG	N-NITROSODI-N-PROPYLAMINE
410U	UG/KG	HEXACHLOROETHANE
410U	UG/KG	NITROBENZENE
410U	UG/KG	ISOPHORONE
410U	UG/KG	2-NITROPHENOL
410U	UG/KG	2,4-DIMETHYLPHENOL
410U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
410U	UG/KG	2,4-DICHLOROPHENOL
410U	UG/KG	NAPHTHALENE
410U	UG/KG	4-CHLOROANILINE
410U	UG/KG	HEXACHLOROBUTADIENE
410U	UG/KG	CAPROLACTAM
410U	UG/KG	4-CHLORO-3-METHYLPHENOL
410U	UG/KG	2-METHYLNAPHTHALENE
410U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
410U	UG/KG	2,4,6-TRICHLOROPHENOL
1000U	UG/KG	2,4,5-TRICHLOROPHENOL
410U	UG/KG	1,1-BIPHENYL
410U	UG/KG	2-CHLORONAPHTHALENE
1000U	UG/KG	2-NITROANILINE
410U	UG/KG	DIMETHYL PHTHALATE
410U	UG/KG	2,6-DINITROTOLUENE
410U	UG/KG	ACENAPHTHYLENE
1000U	UG/KG	3-NITROANILINE
410U	UG/KG	ACENAPHTHENE
1000U	UG/KG	2,4-DINITROPHENOL
1000U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
410U	UG/KG	DIBENZOFURAN
410U	UG/KG	2,4-DINITROTOLUENE
410U	UG/KG	DIETHYL PHTHALATE
410U	UG/KG	FLUORENE
410U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1000U	UG/KG	4-NITROANILINE
1000U	UG/KG	2-METHYL-4,6-DINITROPHENOL
410U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
410UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
410UJ	UG/KG	HEXACHLOROBENZENE (HCB)
410U	UG/KG	ATRAZINE
1000UJ	UG/KG	PENTACHLOROPHENOL
110J	UG/KG	PHENANTHRENE
410U	UG/KG	ANTHRACENE
410U	UG/KG	CARBAZOLE
410U	UG/KG	DI-N-BUTYLPHTHALATE
140J	UG/KG	FLUORANTHENE
130J	UG/KG	PYRENE
410U	UG/KG	BENZYL BUTYL PHTHALATE
410U	UG/KG	3,3'-DICHLOROBENZIDINE
56J	UG/KG	BENZO(A)ANTHRACENE
75J	UG/KG	CHRYSENE
410U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
410U	UG/KG	DI-N-OCTYLPHTHALATE
42J	UG/KG	BENZO(B)FLUORANTHENE
49J	UG/KG	BENZO(K)FLUORANTHENE
410U	UG/KG	BENZO-A-PYRENE
410U	UG/KG	INDENO (1,2,3-CD) PYRENE
410U	UG/KG	DIBENZO(A,H)ANTHRACENE
410U	UG/KG	BENZO(GH)PERYLENE
21	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4807 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC11SD /

MD No: 0J69

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J69

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:45

Ending:

RESULTS	UNITS	ANALYTE
5700J	UG/KG	10 UNKNOWN
110NJ	UG/KG	TETRADECANOIC ACID
230NJ	UG/KG	9-HEXADECENOIC ACID
460NJ	UG/KG	HEXADECANOIC ACID
83JN	UG/KG	UNKNOWN PAH
210J	UG/KG	UNKNOWN AMIDE
720NJ	UG/KG	DIBENZO [DEF, MNO] CHRYSENE

DATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
c indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4819 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC12SD / MD No: 0J81

Media: SEDIMENT D No: 0J81

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
530J	UG/KG	BENZALDEHYDE
610U	UG/KG	PHENOL
610U	UG/KG	BIS(2-CHLOROETHYL) ETHER
610U	UG/KG	2-CHLOROPHENOL
610U	UG/KG	2-METHYLPHENOL
610UJ	UG/KG	BIS(2-CHLOROISOPROPYL) ETHER
610U	UG/KG	ACETOPHENONE
610U	UG/KG	(3-AND/OR 4-)METHYLPHENOL
610U	UG/KG	N-NITROSODI-N-PROPYLAMINE
610U	UG/KG	HEXACHLOROETHANE
610U	UG/KG	NITROBENZENE
610U	UG/KG	ISOPHORONE
610U	UG/KG	2-NITROPHENOL
610U	UG/KG	2,4-DIMETHYLPHENOL
610U	UG/KG	BIS(2-CHLOROETHOXY)METHANE
610U	UG/KG	2,4-DICHLOROPHENOL
610U	UG/KG	NAPHTHALENE
610U	UG/KG	4-CHLOROANILINE
610U	UG/KG	HEXACHLOROBUTADIENE
610U	UG/KG	CAPROLACTAM
610U	UG/KG	4-CHLORO-3-METHYLPHENOL
610U	UG/KG	2-METHYLNAPHTHALENE
610U	UG/KG	HEXACHLOROCYCLOPENTADIENE (HCCP)
610U	UG/KG	2,4,6-TRICHLOROPHENOL
1500U	UG/KG	2,4,5-TRICHLOROPHENOL
610U	UG/KG	1,1-BIPHENYL
610U	UG/KG	2-CHLORONAPHTHALENE
1500U	UG/KG	2-NITROANILINE
610U	UG/KG	DIMETHYL PHTHALATE
610U	UG/KG	2,6-DINITROTOLUENE
610U	UG/KG	ACENAPHTHYLENE
1500U	UG/KG	3-NITROANILINE
610U	UG/KG	ACENAPHTHENE
1500U	UG/KG	2,4-DINITROPHENOL
1500U	UG/KG	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
610U	UG/KG	DIBENZOFURAN
610U	UG/KG	2,4-DINITROTOLUENE
610U	UG/KG	DIETHYL PHTHALATE
610U	UG/KG	FLUORENE
610U	UG/KG	4-CHLOROPHENYL PHENYL ETHER
1500U	UG/KG	4-NITROANILINE
1500U	UG/KG	2-METHYL-4,6-DINITROPHENOL
610U	UG/KG	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
610UJ	UG/KG	4-BROMOPHENYL PHENYL ETHER
610UJ	UG/KG	HEXACHLOROBENZENE (HCB)
610U	UG/KG	ATRAZINE
1500UJ	UG/KG	PENTACHLOROPHENOL
610U	UG/KG	PHENANTHRENE
610U	UG/KG	ANTHRACENE
610U	UG/KG	CARBAZOLE
610U	UG/KG	DI-N-BUTYLPHTHALATE
89J	UG/KG	FLUORANTHENE
93J	UG/KG	PYRENE
610U	UG/KG	BENZYL BUTYL PHTHALATE
610U	UG/KG	3,3'-DICHLOROBENZIDINE
610U	UG/KG	BENZO(A)ANTHRACENE
82J	UG/KG	CHRYSENE
610U	UG/KG	BIS(2-ETHYLHEXYL) PHTHALATE
610U	UG/KG	DI-N-OCTYLPHTHALATE
610U	UG/KG	BENZO(B)FLUORANTHENE
610U	UG/KG	BENZO(K)FLUORANTHENE
610U	UG/KG	BENZO-A-PYRENE
610U	UG/KG	INDENO (1,2,3-CD) PYRENE
610U	UG/KG	DIBENZO(A,H)ANTHRACENE
610U	UG/KG	BENZO(GHI)PERYLENE
46	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4819 FY 2001 Project: 01-0528

## MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC12SD /

MD No: 0J81

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J81

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:55

Ending:

RESULTS	UNITS	ANALYTE
19000J	UG/KG	21 UNKNOWN
170NJ	UG/KG	PHENOL, 2- (1,1-DIMETHYLETHYL
200NJ	UG/KG	TRIDECAHOIC ACID, 12-METHYL-
480NJ	UG/KG	TETRADECAHOIC ACID
130NJ	UG/KG	PENTADECANOIC ACID
810NJ	UG/KG	HEXADECANOIC ACID, METHYL ES
3400NJ	UG/KG	HEXADECANOIC ACID
1700JN	UG/KG	2 UNKNOWN STEROIDS
1200NJ	UG/KG	D-HOMOANDROSTANE, (5.ALPHA.

ATA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4775 FY 2001 Project: 01-0528

Produced by: McConney, John

## EXTRACTABLES SCAN

Requestor:

Facility: Latex Construction Co

Thunderbolt, GA

Project Leader: CKING

Programs: SF

Case No: 29099

Beginning: 03/30/2001 10:10

Id/Station: LC01RB /

MD No: 0J37

Inorg Contractor: SENTIN

Ending:

Media: EQUIPMENT RINSE BLANK

D No: 0J37

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10U	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10UJ	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25U	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROBENZENE (HCB)
10UJ	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10UJ	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10UJ	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10UJ	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GH)PERYLENE

Average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

Actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

JC indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4787 FY 2001 Project: 01-0528

## EXTRACTABLES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02RB /

MD No: 0J49

Inorg Contractor: SENTIN

Media: EQUIPMENT RINSE BLANK

D No: 0J49

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:50

Ending:

RESULTS	UNITS	ANALYTE
10UJ	UG/L	BENZALDEHYDE
10U	UG/L	PHENOL
10UJ	UG/L	BIS(2-CHLOROETHYL) ETHER
10U	UG/L	2-CHLOROPHENOL
10U	UG/L	2-METHYLPHENOL
10UJ	UG/L	BIS(2-CHLOROISOPROPYL) ETHER
10U	UG/L	ACETOPHENONE
10U	UG/L	(3-AND/OR 4-)METHYLPHENOL
10U	UG/L	N-NITROSODI-N-PROPYLAMINE
10U	UG/L	HEXACHLOROETHANE
10U	UG/L	NITROBENZENE
10U	UG/L	ISOPHORONE
10U	UG/L	2-NITROPHENOL
10U	UG/L	2,4-DIMETHYLPHENOL
10U	UG/L	BIS(2-CHLOROETHOXY)METHANE
10U	UG/L	2,4-DICHLOROPHENOL
10U	UG/L	NAPHTHALENE
10U	UG/L	4-CHLOROANILINE
10U	UG/L	HEXACHLOROBUTADIENE
10U	UG/L	CAPROLACTAM
10U	UG/L	4-CHLORO-3-METHYLPHENOL
10U	UG/L	2-METHYLNAPHTHALENE
10U	UG/L	HEXACHLOROCYCLOPENTADIENE (HCCP)
10U	UG/L	2,4,6-TRICHLOROPHENOL
25U	UG/L	2,4,5-TRICHLOROPHENOL
10U	UG/L	1,1-BIPHENYL
10U	UG/L	2-CHLORONAPHTHALENE
25U	UG/L	2-NITROANILINE
10U	UG/L	DIMETHYL PHTHALATE
10U	UG/L	2,6-DINITROTOLUENE
10U	UG/L	ACENAPHTHYLENE
25U	UG/L	3-NITROANILINE
10U	UG/L	ACENAPHTHENE
25U	UG/L	2,4-DINITROPHENOL
25UJ	UG/L	4-NITROPHENOL

RESULTS	UNITS	ANALYTE
10U	UG/L	DIBENZOFURAN
10U	UG/L	2,4-DINITROTOLUENE
10U	UG/L	DIETHYL PHTHALATE
10U	UG/L	FLUORENE
10U	UG/L	4-CHLOROPHENYL PHENYL ETHER
25U	UG/L	4-NITROANILINE
25U	UG/L	2-METHYL-4,6-DINITROPHENOL
10U	UG/L	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
10U	UG/L	4-BROMOPHENYL PHENYL ETHER
10U	UG/L	HEXACHLOROBENZENE (HCB)
10U	UG/L	ATRAZINE
25U	UG/L	PENTACHLOROPHENOL
10U	UG/L	PHENANTHRENE
10U	UG/L	ANTHRACENE
10U	UG/L	CARBAZOLE
10U	UG/L	DI-N-BUTYLPHTHALATE
10U	UG/L	FLUORANTHENE
10U	UG/L	PYRENE
10U	UG/L	BENZYL BUTYL PHTHALATE
10U	UG/L	3,3'-DICHLOROBENZIDINE
10U	UG/L	BENZO(A)ANTHRACENE
10U	UG/L	CHRYSENE
10U	UG/L	BIS(2-ETHYLHEXYL) PHTHALATE
10U	UG/L	DI-N-OCTYLPHTHALATE
10U	UG/L	BENZO(B)FLUORANTHENE
10U	UG/L	BENZO(K)FLUORANTHENE
10U	UG/L	BENZO-A-PYRENE
10U	UG/L	INDENO (1,2,3-CD) PYRENE
10U	UG/L	DIBENZO(A,H)ANTHRACENE
10U	UG/L	BENZO(GHI)PERYLENE

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

tual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

Sample 4787 FY 2001 Project: 01-0528

MISCELLANEOUS COMPOUNDS

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC02RB / MD No: 0J49

Media: EQUIPMENT RINSE BLANK D No: 0J49 Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:50

Ending:

RESULTS	UNITS	ANALYTE
5J	UG/L	2 UNKNOWN

TA REPORTED AS IDENTIFIED BY CLP LAB - IDS NOT VERIFIED

verage value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
o indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

MAY 30 2000

MEMORANDUM

Date: 05/24/2001

Subject: Results of PESTICIDES/PCB Sample Analysis  
01-0528 Latex Construction Co  
Thunderbolt, GA

From: McConney, John *John McConney*  
To: King, CharlesL

CC: Heather Kennedy  
START/TT

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

# ORGANIC DATA QUALIFIER REPORT

Case Number:	29099	Project Number	01-0528	SAS Number	N/A
Site ID:	Latex Construction Co, Thunderbolt, GA				
Date:	5/4/01				

<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
<u>VOA</u>			
4776,4779,4788, 4794,4795,4797- 4799,4801-4807, 4815	dichlorodifluoromethane, chloromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, methylcyclohexane, 1,2-dibromo-3-chloropropane	J	erratic response factor
4777-4778,4780, 4781,4786,4789- 4791,4793,4822	dichlorodifluoromethane, chloromethane, vinyl chloride, bromomethane, trichlorofluoromethane, methylene chloride	J	erratic response factor
4779,4794,4799, 4807,4809,4810, 4815	acetone	J	contaminated storage blank
4796,4809,4810, 4818,4819	dichlorodifluoromethane, chloromethane, trichlorofluoromethane, acetone, methyl acetate, methylene chloride, tert-butyl methyl ether, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, 1,2-dibromoethane, 1,3-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, 1,2,4-trichlorobenzene	J	erratic response factor
<u>BNA</u>			
4775	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor
4776-4777	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, butylbenzylphthalate	J	erratic response factor
4777	phenanthrene, anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

Affected Samples	Compound or Fraction	Flag Used	Reason
4778	2-methylphenol, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4778-4781,4786, 4788-4791,4793	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, butylbenzylphthalate	J	erratic response factor
4780	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4782-4783,4785	benzaldehyde	J	erratic response factor
4784	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor
4787,4792	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), 4-nitrophenol	J	erratic response factor
4788,4791	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4790	acenaphthene, phenanthrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, benzo(g,h,i)perylene	J	< quantitation limit
4794-4798	benzaldehyde, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, benzo(k)fluoranthene	J	erratic response factor
4794	fluoranthene, pyrene	J	< quantitation limit

## ORGANIC DATA QUALIFIER REPORT

Case Number:	29099	Project Number	01-0528	SAS Number	N/A
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Site ID:	Latex Construction Co, Thunderbolt, GA
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Date:	5/4/01
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Affected Samples	Compound or Fraction	Flag Used	Reason
4795	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4797	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene	J	< quantitation limit
4799,4801,4802	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-bromophenyl-phenylether, hexachlorobenzene, pentachlorophenol	J	erratic response factor
4799	fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4800	benzaldehyde, bis(2-chloroethyl)ether, 2,2'-oxybis(1-chloropropane), hexachlorobutadiene, hexachlorocyclopentadiene, 4-nitrophenol, atrazine, di-n-octylphthalate	J	erratic response factor
4801	2-methylnaphthalene, 1,1'-biphenyl, acenaphthene, dibenzofuran, carbazole, chrysene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene	J	< quantitation limit
4802	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit
4803	benzaldehyde, phenol, acetophenone, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene	J	< quantitation limit

# ORGANIC DATA QUALIFIER REPORT

Case Number: 29099 Project Number 01-0528 SAS Number N/A

Site ID: Latex Construction Co, Thunderbolt, GA

Date: 5/4/01

Affected Samples	Compound or Fraction	Flag Used	Reason
4803-4807,4815	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-bromophenyl-phenylether, hexachlorobenzene, pentachlorophenol	J	erratic response factor
4804	fluoranthene, pyrene	J	< quantitation limit
4805	fluoranthene, pyrene, chrysene, benzo(b)fluoranthene	J	< quantitation limit
4807	phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4808	benzaldehyde, 2,2'-oxybis(1-chloropropane), 4-chloroaniline, atrazine, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate	J	erratic response factor
4809-4810	benzaldehyde, 2,2'-oxybis(1-chloropropane), benzo(g,h,i)perylene	J	erratic response factor
4809	phenanthrene, fluoranthene, pyrene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene	J	< quantitation limit
4811,4812,4817-4820	benzaldehyde, 2,2'-oxybis(1-chloropropane), hexachlorobenzene, atrazine, 3,3'-dichlorobenzidine	J	erratic response factor
4811	naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, phenanthrene, anthracene, fluoranthene	J	< quantitation limit
4812	acenaphthene, fluorene, phenanthrene	J	< quantitation limit
4819	benzaldehyde, fluoranthene, pyrene, chrysene	J	< quantitation limit
4821	benzaldehyde, 2,2'-oxybis(1-chloropropane), 2-nitroaniline, atrazine, benzo(k)fluoranthene	J	erratic response factor
4821	naphthalene, 2-methylnaphthalene, phenanthrene, anthracene, fluoranthene	J	< quantitation limit

## ORGANIC DATA QUALIFIER REPORT

Case Number:	29099	Project Number	01-0528	SAS Number	N/A
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Site ID:	Latex Construction Co, Thunderbolt, GA
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Date:	5/4/01
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Affected SamplesCompound or FractionFlag  
UsedReasonPEST

4775,4782,4783	all compounds	J	exceeded holding times
4775,4782-4785, 4787,4792,4800, 4808,4811,4812, 4817,4820,4821	endosulfan I, endosulfan II	J	warning low in PE sample
4776-4781,4786, 4788-4791,4793- 4799,4801-4807, 4809,4810,4815, 4818,4819	endosulfan I	R	missed in PE sample
4776,4777,4779- 4781,4785-4787, 4789-4793	4,4'-DDT	J	erratic response factor
4777,4780	dieldrin	N	difference in columns
4778	dieldrin, endrin aldehyde	N	difference in columns
4787,4789	all compounds	J	low surrogate recovery
4788	4,4'-DDT	N	difference in columns
4788	endosulfan II, 4,4'-DDT, methoxychlor, gamma-chlordane	J	high surrogate recovery
4790	dieldrin	N	difference in columns
4791	methoxychlor	J,N	high surrogate recovery, difference in columns
4795,4802	dieldrin	N	difference in columns
4796	aroclor-1254	J	< quantitation limit
4798	alpha-BHC, dieldrin	N	difference in columns
4803	4,4'-DDT, endrin ketone, gamma-chlordane	N	difference in columns

# ORGANIC DATA QUALIFIER REPORT

Case Number:	29099	Project Number	01-0528	SAS Number	N/A
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Site ID.	Latex Construction Co, Thunderbolt, GA
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Date:	5/4/01
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<u>Affected Samples</u>	<u>Compound or Fraction</u>	<u>Flag Used</u>	<u>Reason</u>
4804	heptachlor, alpha-chlordane, gamma-chlordane	N	difference in columns
4805	endrin ketone	N	difference in columns
4808,4815	all compounds	J	low surrogate recovery
4821	dieldrin	N	difference in columns



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division  
980 College Station Road  
Athens, Georgia 30605-2720

APR 27 RECD

MEMORANDUM

Date: 04/25/2001

Subject: Results of PESTICIDES/PCB Sample Analysis  
01-0529 Latex Construction Co  
Thunderbolt, GA

From: Revells, Lavon *LAR*  
To: King, CharlesL

CC: Heather Kennedy  
START/TT

Thru: Cosgrove, Bill *Bill*  
Chief, Organic Chemistry Section  
Analytical Support Branch

Attached are the results of analysis of samples collected as part of the subject project. Quantitation for Endrin in all samples is suspect based on the QC data. If you have any questions, please contact me.

ATTACHMENT

Sample 4805 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC01SS / MD No: 0J67

Media: SURFACE SOIL (0" - 12") D No: 0J67

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 11:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.9U	UG/KG	ALPHA-BHC
1.9U	UG/KG	BETA-BHC
1.9U	UG/KG	DELTA-BHC
1.9U	UG/KG	GAMMA-BHC (LINDANE)
1.9U	UG/KG	HEPTACHLOR
1.9U	UG/KG	ALDRIN
4.5U	UG/KG	HEPTACHLOR EPOXIDE
1.9UR	UG/KG	ENDOSULFAN I (ALPHA)
3.7U	UG/KG	DIELDRIN
3.7U	UG/KG	4,4'-DDE (P,P'-DDE)
3.7U	UG/KG	ENDRIN
3.7U	UG/KG	ENDOSULFAN II (BETA)
3.7U	UG/KG	4,4'-DDD (P,P'-DDD)
3.7U	UG/KG	ENDOSULFAN SULFATE
3.7U	UG/KG	4,4'-DDT (P,P'-DDT)
1.9U	UG/KG	METHOXYCHLOR
6.3N	UG/KG	ENDRIN KETONE
3.7U	UG/KG	ENDRIN ALDEHYDE
2.6	UG/KG	ALPHA-CHLORDANE 1/2
6.7	UG/KG	GAMMA-CHLORDANE 1/2
190U	UG/KG	TOXAPHENE
37U	UG/KG	PCB-1016 (AROCLOR 1016)
74U	UG/KG	PCB-1221 (AROCLOR 1221)
37U	UG/KG	PCB-1232 (AROCLOR 1232)
37U	UG/KG	PCB-1242 (AROCLOR 1242)
37U	UG/KG	PCB-1248 (AROCLOR 1248)
3.7U	UG/KG	PCB-1254 (AROCLOR 1254)
37U	UG/KG	PCB-1260 (AROCLOR 1260)
10	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Page 1 of 1

Sample 4776 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SS /

MD No: 0J38

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J38

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:35

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1U	UG/KG	ALPHA-BHC
2.1U	UG/KG	BETA-BHC
2.1U	UG/KG	DELTA-BHC
2.1U	UG/KG	GAMMA-BHC (LINDANE)
2.1U	UG/KG	HEPTACHLOR
2.1U	UG/KG	ALDRIN
2.1U	UG/KG	HEPTACHLOR EPOXIDE
2.1UR	UG/KG	ENDOSULFAN I (ALPHA)
4.2U	UG/KG	DIELDRIN
4.2U	UG/KG	4,4'-DDE (P,P'-DDE)
4.2U	UG/KG	ENDRIN
4.2U	UG/KG	ENDOSULFAN II (BETA)
4.2U	UG/KG	4,4'-DDD (P,P'-DDD)
4.2U	UG/KG	ENDOSULFAN SULFATE
4.2UJ	UG/KG	4,4'-DDT (P,P'-DDT)
21U	UG/KG	METHOXYCHLOR
4.2U	UG/KG	ENDRIN KETONE
4.2U	UG/KG	ENDRIN ALDEHYDE
2.1U	UG/KG	ALPHA-CHLORDANE /2
2.1U	UG/KG	GAMMA-CHLORDANE /2
210U	UG/KG	TOXAPHENE
42U	UG/KG	PCB-1016 (AROCLOR 1016)
84U	UG/KG	PCB-1221 (AROCLOR 1221)
42U	UG/KG	PCB-1232 (AROCLOR 1232)
42U	UG/KG	PCB-1242 (AROCLOR 1242)
42U	UG/KG	PCB-1248 (AROCLOR 1248)
42U	UG/KG	PCB-1254 (AROCLOR 1254)
42U	UG/KG	PCB-1260 (AROCLOR 1260)
22	%	% MOISTURE

U-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

J-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

J-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4780 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SS /

MD No: 0J42

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J42

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.0U	UG/KG	ALPHA-BHC
2.0U	UG/KG	BETA-BHC
2.0U	UG/KG	DELTA-BHC
2.0U	UG/KG	GAMMA-BHC (LINDANE)
2.0U	UG/KG	HEPTACHLOR
2.0U	UG/KG	ALDRIN
2.0U	UG/KG	HEPTACHLOR EPOXIDE
2.0UR	UG/KG	ENDOSULFAN I (ALPHA)
12N	UG/KG	DIELDRIN
3.9U	UG/KG	4,4'-DDE (P,P'-DDE)
3.9U	UG/KG	ENDRIN
3.9U	UG/KG	ENDOSULFAN II (BETA)
3.9U	UG/KG	4,4'-DDD (P,P'-DDD)
3.9U	UG/KG	ENDOSULFAN SULFATE
5.7UJ	UG/KG	4,4'-DDT (P,P'-DDT)
20U	UG/KG	METHOXYCHLOR
3.9U	UG/KG	ENDRIN KETONE
3.9U	UG/KG	ENDRIN ALDEHYDE
2.0U	UG/KG	ALPHA-CHLORDANE 1/2
3.4	UG/KG	GAMMA-CHLORDANE 1/2
200U	UG/KG	TOXAPHENE
39U	UG/KG	PCB-1016 (AROCLOR 1016)
80U	UG/KG	PCB-1221 (AROCLOR 1221)
39U	UG/KG	PCB-1232 (AROCLOR 1232)
39U	UG/KG	PCB-1242 (AROCLOR 1242)
39U	UG/KG	PCB-1248 (AROCLOR 1248)
72	UG/KG	PCB-1254 (AROCLOR 1254)
39U	UG/KG	PCB-1260 (AROCLOR 1260)
17	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4801 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Programs: SF

Case No: 29099

Id/Station: LC04SS /

MD No: 0J63

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J63

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.9U	UG/KG	ALPHA-BHC
1.9U	UG/KG	BETA-BHC
1.9U	UG/KG	DELTA-BHC
1.9U	UG/KG	GAMMA-BHC (LINDANE)
1.9U	UG/KG	HEPTACHLOR
1.9U	UG/KG	ALDRIN
1.9U	UG/KG	HEPTACHLOR EPOXIDE
1.9UR	UG/KG	ENDOSULFAN I (ALPHA)
3.7U	UG/KG	DIELDRIN
3.7U	UG/KG	4,4'-DDE (P,P'-DDE)
3.7U	UG/KG	ENDRIN
3.7U	UG/KG	ENDOSULFAN II (BETA)
3.7U	UG/KG	4,4'-DDD (P,P'-DDD)
3.7U	UG/KG	ENDOSULFAN SULFATE
3.7U	UG/KG	4,4'-DDT (P,P'-DDT)
19U	UG/KG	METHOXYCHLOR
3.7U	UG/KG	ENDRIN KETONE
3.7U	UG/KG	ENDRIN ALDEHYDE
1.9U	UG/KG	ALPHA-CHLORDANE /2
1.9U	UG/KG	GAMMA-CHLORDANE /2
190U	UG/KG	TOXAPHENE
37U	UG/KG	PCB-1016 (AROCLOR 1016)
75U	UG/KG	PCB-1221 (AROCLOR 1221)
37U	UG/KG	PCB-1232 (AROCLOR 1232)
37U	UG/KG	PCB-1242 (AROCLOR 1242)
37U	UG/KG	PCB-1248 (AROCLOR 1248)
37U	UG/KG	PCB-1254 (AROCLOR 1254)
37U	UG/KG	PCB-1260 (AROCLOR 1260)
11	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4788 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SS /

MD No: 0J50

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J50

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:43

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.8U	UG/KG	ALPHA-BHC
1.8U	UG/KG	BETA-BHC
1.8U	UG/KG	DELTA-BHC
2.8U	UG/KG	GAMMA-BHC (LINDANE)
1.8U	UG/KG	HEPTACHLOR
1.8U	UG/KG	ALDRIN
1.8U	UG/KG	HEPTACHLOR EPOXIDE
1.8UR	UG/KG	ENDOSULFAN I (ALPHA)
14U	UG/KG	DIELDRIN
16U	UG/KG	4,4'-DDE (P,P'-DDE)
53U	UG/KG	ENDRIN
23J	UG/KG	ENDOSULFAN II (BETA)
3.5U	UG/KG	4,4'-DDD (P,P'-DDD)
3.5U	UG/KG	ENDOSULFAN SULFATE
13NJ	UG/KG	4,4'-DDT (P,P'-DDT)
90J	UG/KG	METHOXYCHLOR
3.5U	UG/KG	ENDRIN KETONE
3.5U	UG/KG	ENDRIN ALDEHYDE
1.8U	UG/KG	ALPHA-CHLORDANE /2
2.0J	UG/KG	GAMMA-CHLORDANE /2
180U	UG/KG	TOXAPHENE
35U	UG/KG	PCB-1016 (AROCLOR 1016)
70U	UG/KG	PCB-1221 (AROCLOR 1221)
35U	UG/KG	PCB-1232 (AROCLOR 1232)
35U	UG/KG	PCB-1242 (AROCLOR 1242)
35U	UG/KG	PCB-1248 (AROCLOR 1248)
35U	UG/KG	PCB-1254 (AROCLOR 1254)
35U	UG/KG	PCB-1260 (AROCLOR 1260)
5.0	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4790 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Programs: SF Case No: 29099

Id/Station: LC06SS / MD No: 0J52

Media: SURFACE SOIL (0" - 12") D No: 0J52

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 12:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.8U	UG/KG	ALPHA-BHC
1.8U	UG/KG	BETA-BHC
1.8U	UG/KG	DELTA-BHC
1.8U	UG/KG	GAMMA-BHC (LINDANE)
1.8U	UG/KG	HEPTACHLOR
1.8U	UG/KG	ALDRIN
1.8U	UG/KG	HEPTACHLOR EPOXIDE
1.8UR	UG/KG	ENDOSULFAN I (ALPHA)
4.9N	UG/KG	DIELDRIN
3.4U	UG/KG	4,4'-DDE (P,P'-DDE)
3.4U	UG/KG	ENDRIN
3.4U	UG/KG	ENDOSULFAN II (BETA)
3.4U	UG/KG	4,4'-DDD (P,P'-DDD)
3.4U	UG/KG	ENDOSULFAN SULFATE
3.4UJ	UG/KG	4,4'-DDT (P,P'-DDT)
18U	UG/KG	METHOXYCHLOR
3.4U	UG/KG	ENDRIN KETONE
3.4U	UG/KG	ENDRIN ALDEHYDE
1.8U	UG/KG	ALPHA-CHLORDANE /2
1.8U	UG/KG	GAMMA-CHLORDANE /2
180U	UG/KG	TOXAPHENE
34U	UG/KG	PCB-1016 (AROCLOR 1016)
70U	UG/KG	PCB-1221 (AROCLOR 1221)
34U	UG/KG	PCB-1232 (AROCLOR 1232)
34U	UG/KG	PCB-1242 (AROCLOR 1242)
34U	UG/KG	PCB-1248 (AROCLOR 1248)
34U	UG/KG	PCB-1254 (AROCLOR 1254)
34U	UG/KG	PCB-1260 (AROCLOR 1260)
5.0	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4795 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC07SS / MD No: 0J57

Media: SURFACE SOIL (0" - 12") D No: 0J57

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:45

Ending:

DATA REPORTED ON DRY WEIGHT BASIS.

RESULTS	UNITS	ANALYTE
2.0U	UG/KG	ALPHA-BHC
2.0U	UG/KG	BETA-BHC
2.0U	UG/KG	DELTA-BHC
2.0U	UG/KG	GAMMA-BHC (LINDANE)
2.0U	UG/KG	HEPTACHLOR
2.0U	UG/KG	ALDRIN
2.0U	UG/KG	HEPTACHLOR EPOXIDE
2.0UR	UG/KG	ENDOSULFAN I (ALPHA)
6.8N	UG/KG	DIELDRIN
3.8U	UG/KG	4,4'-DDE (P,P'-DDE)
3.8U	UG/KG	ENDRIN
3.8U	UG/KG	ENDOSULFAN II (BETA)
3.8U	UG/KG	4,4'-DDD (P,P'-DDD)
3.8U	UG/KG	ENDOSULFAN SULFATE
3.8U	UG/KG	4,4'-DDT (P,P'-DDT)
20U	UG/KG	METHOXYCHLOR
3.8U	UG/KG	ENDRIN KETONE
3.8U	UG/KG	ENDRIN ALDEHYDE
2.0U	UG/KG	ALPHA-CHLORDANE /2
2.0U	UG/KG	GAMMA-CHLORDANE /2
200U	UG/KG	TOXAPHENE
38U	UG/KG	PCB-1016 (AROCLOR 1016)
78U	UG/KG	PCB-1221 (AROCLOR 1221)
38U	UG/KG	PCB-1232 (AROCLOR 1232)
38U	UG/KG	PCB-1242 (AROCLOR 1242)
38U	UG/KG	PCB-1248 (AROCLOR 1248)
38U	UG/KG	PCB-1254 (AROCLOR 1254)
38U	UG/KG	PCB-1260 (AROCLOR 1260)
15	%	% MOISTURE

Sample 4803 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SS /

MD No: 0J65

Inorg Contractor: SENTIN

Media: SURFACE SOIL (0" - 12")

D No: 0J65

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.9U	UG/KG	ALPHA-BHC
1.9U	UG/KG	BETA-BHC
1.9U	UG/KG	DELTA-BHC
4.4U	UG/KG	GAMMA-BHC (LINDANE)
1.9U	UG/KG	HEPTACHLOR
1.9U	UG/KG	ALDRIN
1.9U	UG/KG	HEPTACHLOR EPOXIDE
1.9UR	UG/KG	ENDOSULFAN I (ALPHA)
3.7U	UG/KG	DIELDRIN
3.7U	UG/KG	4,4'-DDE (P,P'-DDE)
3.7U	UG/KG	ENDRIN
3.7U	UG/KG	ENDOSULFAN II (BETA)
3.7U	UG/KG	4,4'-DDD (P,P'-DDD)
3.7U	UG/KG	ENDOSULFAN SULFATE
5.2N	UG/KG	4,4'-DDT (P,P'-DDT)
19U	UG/KG	METHOXYCHLOR
8.5N	UG/KG	ENDRIN KETONE
3.7U	UG/KG	ENDRIN ALDEHYDE
2.9	UG/KG	ALPHA-CHLORDANE /2
2.1N	UG/KG	GAMMA-CHLORDANE /2
190U	UG/KG	TOXAPHENE
37U	UG/KG	PCB-1016 (AROCLOR 1016)
75U	UG/KG	PCB-1221 (AROCLOR 1221)
37U	UG/KG	PCB-1232 (AROCLOR 1232)
37U	UG/KG	PCB-1242 (AROCLOR 1242)
37U	UG/KG	PCB-1248 (AROCLOR 1248)
37U	UG/KG	PCB-1254 (AROCLOR 1254)
37U	UG/KG	PCB-1260 (AROCLOR 1260)
11	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4778 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC09SS / MD No: 0J40

Media: SURFACE SOIL (0" - 12") D No: 0J40

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 11:40

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1U	UG/KG	ALPHA-BHC
2.1U	UG/KG	BETA-BHC
2.1U	UG/KG	DELTA-BHC
2.1U	UG/KG	GAMMA-BHC (LINDANE)
2.1U	UG/KG	HEPTACHLOR
2.2U	UG/KG	ALDRIN
2.1U	UG/KG	HEPTACHLOR EPOXIDE
2.3UR	UG/KG	ENDOSULFAN I (ALPHA)
14N	UG/KG	DIELDRIN
4.1U	UG/KG	4,4'-DDE (P,P'-DDE)
4.1U	UG/KG	ENDRIN
4.1U	UG/KG	ENDOSULFAN II (BETA)
4.1U	UG/KG	4,4'-DDD (P,P'-DDD)
4.1U	UG/KG	ENDOSULFAN SULFATE
4.1U	UG/KG	4,4'-DDT (P,P'-DDT)
21U	UG/KG	METHOXYCHLOR
4.1U	UG/KG	ENDRIN KETONE
5.2N	UG/KG	ENDRIN ALDEHYDE
2.1U	UG/KG	ALPHA-CHLORDANE /2
2.1U	UG/KG	GAMMA-CHLORDANE /2
210U	UG/KG	TOXAPHENE
41U	UG/KG	PCB-1016 (AROCLOR 1016)
83U	UG/KG	PCB-1221 (AROCLOR 1221)
41U	UG/KG	PCB-1232 (AROCLOR 1232)
41U	UG/KG	PCB-1242 (AROCLOR 1242)
41U	UG/KG	PCB-1248 (AROCLOR 1248)
70	UG/KG	PCB-1254 (AROCLOR 1254)
41U	UG/KG	PCB-1260 (AROCLOR 1260)
21	%	% MOISTURE

1-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

2-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

3-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

4-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

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Sample 4806 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01SB /

MD No: 0J68

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J68

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 11:30

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.9U	UG/KG	ALPHA-BHC
1.9U	UG/KG	BETA-BHC
1.9U	UG/KG	DELTA-BHC
1.9U	UG/KG	GAMMA-BHC (LINDANE)
1.9U	UG/KG	HEPTACHLOR
1.9U	UG/KG	ALDRIN
1.9U	UG/KG	HEPTACHLOR EPOXIDE
1.9UR	UG/KG	ENDOSULFAN I (ALPHA)
3.6U	UG/KG	DIELDRIN
3.6U	UG/KG	4,4'-DDE (P,P'-DDE)
3.6U	UG/KG	ENDRIN
3.6U	UG/KG	ENDOSULFAN II (BETA)
3.6U	UG/KG	4,4'-DDD (P,P'-DDD)
3.6U	UG/KG	ENDOSULFAN SULFATE
3.6U	UG/KG	4,4'-DDT (P,P'-DDT)
1.9U	UG/KG	METHOXYCHLOR
7.6U	UG/KG	ENDRIN KETONE
3.6U	UG/KG	ENDRIN ALDEHYDE
1.9U	UG/KG	ALPHA-CHLORDANE /2
1.9U	UG/KG	GAMMA-CHLORDANE /2
190U	UG/KG	TOXAPHENE
36U	UG/KG	PCB-1016 (AROCLOR 1016)
73U	UG/KG	PCB-1221 (AROCLOR 1221)
36U	UG/KG	PCB-1232 (AROCLOR 1232)
36U	UG/KG	PCB-1242 (AROCLOR 1242)
36U	UG/KG	PCB-1248 (AROCLOR 1248)
36U	UG/KG	PCB-1254 (AROCLOR 1254)
36U	UG/KG	PCB-1260 (AROCLOR 1260)
9.0	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4777 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SB /

MD No: 0J39

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J39

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 12:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1U	UG/KG	ALPHA-BHC
2.1U	UG/KG	BETA-BHC
2.1U	UG/KG	DELTA-BHC
2.1U	UG/KG	GAMMA-BHC (LINDANE)
2.1U	UG/KG	HEPTACHLOR
2.1U	UG/KG	ALDRIN
2.1U	UG/KG	HEPTACHLOR EPOXIDE
2.1UR	UG/KG	ENDOSULFAN I (ALPHA)
5.3N	UG/KG	DIELDRIN
4.1U	UG/KG	4,4'-DDE (P,P'-DDE)
4.1U	UG/KG	ENDRIN
4.1U	UG/KG	ENDOSULFAN II (BETA)
4.1U	UG/KG	4,4'-DDD (P,P'-DDD)
4.1U	UG/KG	ENDOSULFAN SULFATE
4.1UJ	UG/KG	4,4'-DDT (P,P'-DDT)
21U	UG/KG	METHOXYCHLOR
4.1U	UG/KG	ENDRIN KETONE
4.1U	UG/KG	ENDRIN ALDEHYDE
2.1U	UG/KG	ALPHA-CHLORDANE /2
2.1U	UG/KG	GAMMA-CHLORDANE /2
210U	UG/KG	TOXAPHENE
41U	UG/KG	PCB-1016 (AROCLOR 1016)
83U	UG/KG	PCB-1221 (AROCLOR 1221)
41U	UG/KG	PCB-1232 (AROCLOR 1232)
41U	UG/KG	PCB-1242 (AROCLOR 1242)
41U	UG/KG	PCB-1248 (AROCLOR 1248)
41U	UG/KG	PCB-1254 (AROCLOR 1254)
41U	UG/KG	PCB-1260 (AROCLOR 1260)
19	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

!-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4781 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SB /

MD No: 0J43

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J43

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1U	UG/KG	ALPHA-BHC
2.1U	UG/KG	BETA-BHC
2.1U	UG/KG	DELTA-BHC
2.1U	UG/KG	GAMMA-BHC (LINDANE)
2.1U	UG/KG	HEPTACHLOR
2.1U	UG/KG	ALDRIN
2.1U	UG/KG	HEPTACHLOR EPOXIDE
2.1UR	UG/KG	ENDOSULFAN I (ALPHA)
4.1U	UG/KG	DIELDRIN
4.1U	UG/KG	4,4'-DDE (P,P'-DDE)
4.1U	UG/KG	ENDRIN
4.1U	UG/KG	ENDOSULFAN II (BETA)
4.1U	UG/KG	4,4'-DDD (P,P'-DDD)
4.1U	UG/KG	ENDOSULFAN SULFATE
4.1UJ	UG/KG	4,4'-DDT (P,P'-DDT)
21U	UG/KG	METHOXYCHLOR
4.1U	UG/KG	ENDRIN KETONE
4.1U	UG/KG	ENDRIN ALDEHYDE
2.1U	UG/KG	ALPHA-CHLORDANE /2
2.1U	UG/KG	GAMMA-CHLORDANE /2
210U	UG/KG	TOXAPHENE
41U	UG/KG	PCB-1016 (AROCLOR 1016)
84U	UG/KG	PCB-1221 (AROCLOR 1221)
41U	UG/KG	PCB-1232 (AROCLOR 1232)
41U	UG/KG	PCB-1242 (AROCLOR 1242)
41U	UG/KG	PCB-1248 (AROCLOR 1248)
41U	UG/KG	PCB-1254 (AROCLOR 1254)
41U	UG/KG	PCB-1260 (AROCLOR 1260)
21	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4802 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SB /

MD No: 0J64

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J64

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:40

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.8U	UG/KG	ALPHA-BHC
1.8U	UG/KG	BETA-BHC
1.8U	UG/KG	DELTA-BHC
1.8U	UG/KG	GAMMA-BHC (LINDANE)
1.8U	UG/KG	HEPTACHLOR
19	UG/KG	ALDRIN
1.8U	UG/KG	HEPTACHLOR EPOXIDE
1.8UR	UG/KG	ENDOSULFAN I (ALPHA)
18N	UG/KG	DIELDRIN
3.4U	UG/KG	4,4'-DDE (P,P'-DDE)
3.4U	UG/KG	ENDRIN
3.4U	UG/KG	ENDOSULFAN II (BETA)
3.4U	UG/KG	4,4'-DDD (P,P'-DDD)
3.4U	UG/KG	ENDOSULFAN SULFATE
3.4U	UG/KG	4,4'-DDT (P,P'-DDT)
18U	UG/KG	METHOXYCHLOR
3.4U	UG/KG	ENDRIN KETONE
3.4U	UG/KG	ENDRIN ALDEHYDE
1.8U	UG/KG	ALPHA-CHLORDANE /2
1.8U	UG/KG	GAMMA-CHLORDANE /2
180U	UG/KG	TOXAPHENE
34U	UG/KG	PCB-1016 (AROCLOR 1016)
69U	UG/KG	PCB-1221 (AROCLOR 1221)
34U	UG/KG	PCB-1232 (AROCLOR 1232)
34U	UG/KG	PCB-1242 (AROCLOR 1242)
760	UG/KG	PCB-1248 (AROCLOR 1248)
34U	UG/KG	PCB-1254 (AROCLOR 1254)
34U	UG/KG	PCB-1260 (AROCLOR 1260)
5.0	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4789 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SB /

MD No: 0J51

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J51

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.8UJ	UG/KG	ALPHA-BHC
1.8UJ	UG/KG	BETA-BHC
1.8UJ	UG/KG	DELTA-BHC
1.8UJ	UG/KG	GAMMA-BHC (LINDANE)
1.8UJ	UG/KG	HEPTACHLOR
1.8UJ	UG/KG	ALDRIN
1.8UJ	UG/KG	HEPTACHLOR EPOXIDE
1.8UR	UG/KG	ENDOSULFAN I (ALPHA)
3.6UJ	UG/KG	DIELDRIN
3.6UJ	UG/KG	4,4'-DDE (P,P'-DDE)
3.6UJ	UG/KG	ENDRIN
3.6UJ	UG/KG	ENDOSULFAN II (BETA)
3.6UJ	UG/KG	4,4'-DDD (P,P'-DDD)
3.6UJ	UG/KG	ENDOSULFAN SULFATE
3.6UJ	UG/KG	4,4'-DDT (P,P'-DDT)
1.8UJ	UG/KG	METHOXYCHLOR
3.6UJ	UG/KG	ENDRIN KETONE
3.6UJ	UG/KG	ENDRIN ALDEHYDE
1.8UJ	UG/KG	ALPHA-CHLORDANE /2
1.8UJ	UG/KG	GAMMA-CHLORDANE /2
180UJ	UG/KG	TOXAPHENE
36UJ	UG/KG	PCB-1016 (AROCLOR 1016)
72UJ	UG/KG	PCB-1221 (AROCLOR 1221)
36UJ	UG/KG	PCB-1232 (AROCLOR 1232)
36UJ	UG/KG	PCB-1242 (AROCLOR 1242)
36UJ	UG/KG	PCB-1248 (AROCLOR 1248)
36UJ	UG/KG	PCB-1254 (AROCLOR 1254)
36UJ	UG/KG	PCB-1260 (AROCLOR 1260)
9.0	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4791 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC06SB / MD No: 0J53

Media: SUBSURFACE SOIL (> 12") D No: 0J53

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 12:25

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.9U	UG/KG	ALPHA-BHC
1.9U	UG/KG	BETA-BHC
1.9U	UG/KG	DELTA-BHC
1.9U	UG/KG	GAMMA-BHC (LINDANE)
1.9U	UG/KG	HEPTACHLOR
1.9U	UG/KG	ALDRIN
1.9U	UG/KG	HEPTACHLOR EPOXIDE
1.9UR	UG/KG	ENDOSULFAN I (ALPHA)
12U	UG/KG	DIELDRIN
3.6U	UG/KG	4,4'-DDE (P,P'-DDE)
5.5U	UG/KG	ENDRIN
3.6U	UG/KG	ENDOSULFAN II (BETA)
3.6U	UG/KG	4,4'-DDD (P,P'-DDD)
3.6U	UG/KG	ENDOSULFAN SULFATE
3.7UJ	UG/KG	4,4'-DDT (P,P'-DDT)
27NJ	UG/KG	METHOXYCHLOR
14U	UG/KG	ENDRIN KETONE
3.6U	UG/KG	ENDRIN ALDEHYDE
1.9U	UG/KG	ALPHA-CHLORDANE /2
1.9U	UG/KG	GAMMA-CHLORDANE /2
190U	UG/KG	TOXAPHENE
36U	UG/KG	PCB-1016 (AROCLOR 1016)
73U	UG/KG	PCB-1221 (AROCLOR 1221)
36U	UG/KG	PCB-1232 (AROCLOR 1232)
36U	UG/KG	PCB-1242 (AROCLOR 1242)
36U	UG/KG	PCB-1248 (AROCLOR 1248)
36U	UG/KG	PCB-1254 (AROCLOR 1254)
36U	UG/KG	PCB-1260 (AROCLOR 1260)
9.0	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

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Sample 4796 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SB /

MD No: 0J58

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J58

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.8U	UG/KG	ALPHA-BHC
1.8U	UG/KG	BETA-BHC
1.8U	UG/KG	DELTA-BHC
1.8U	UG/KG	GAMMA-BHC (LINDANE)
1.8U	UG/KG	HEPTACHLOR
1.8U	UG/KG	ALDRIN
1.8U	UG/KG	HEPTACHLOR EPOXIDE
1.8UR	UG/KG	ENDOSULFAN I (ALPHA)
3.6U	UG/KG	DIELDRIN
3.6U	UG/KG	4,4'-DDE (P,P'-DDE)
3.6U	UG/KG	ENDRIN
3.6U	UG/KG	ENDOSULFAN II (BETA)
3.6U	UG/KG	4,4'-DDD (P,P'-DDD)
3.6U	UG/KG	ENDOSULFAN SULFATE
3.6U	UG/KG	4,4'-DDT (P,P'-DDT)
18U	UG/KG	METHOXYCHLOR
3.6U	UG/KG	ENDRIN KETONE
3.6U	UG/KG	ENDRIN ALDEHYDE
1.8U	UG/KG	ALPHA-CHLORDANE /2
1.8U	UG/KG	GAMMA-CHLORDANE /2
180U	UG/KG	TOXAPHENE
36U	UG/KG	PCB-1016 (AROCLOR 1016)
73U	UG/KG	PCB-1221 (AROCLOR 1221)
36U	UG/KG	PCB-1232 (AROCLOR 1232)
36U	UG/KG	PCB-1242 (AROCLOR 1242)
36U	UG/KG	PCB-1248 (AROCLOR 1248)
19J	UG/KG	PCB-1254 (AROCLOR 1254)
36U	UG/KG	PCB-1260 (AROCLOR 1260)
8.0	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable: compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4804 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SB /

MD No: 0J66

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J66

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
1.9U	UG/KG	ALPHA-BHC
1.9U	UG/KG	BETA-BHC
1.9U	UG/KG	DELTA-BHC
1.9U	UG/KG	GAMMA-BHC (LINDANE)
2.1N	UG/KG	HEPTACHLOR
6.2	UG/KG	ALDRIN
1.9U	UG/KG	HEPTACHLOR EPOXIDE
1.9UR	UG/KG	ENDOSULFAN I (ALPHA)
23	UG/KG	DIELDRIN
3.6U	UG/KG	4,4'-DDE (P,P'-DDE)
3.6U	UG/KG	ENDRIN
3.6U	UG/KG	ENDOSULFAN II (BETA)
3.6U	UG/KG	4,4'-DDD (P,P'-DDD)
3.6U	UG/KG	ENDOSULFAN SULFATE
3.6U	UG/KG	4,4'-DDT (P,P'-DDT)
19U	UG/KG	METHOXYCHLOR
3.6U	UG/KG	ENDRIN KETONE
3.6U	UG/KG	ENDRIN ALDEHYDE
5.2N	UG/KG	ALPHA-CHLORDANE /2
11N	UG/KG	GAMMA-CHLORDANE /2
190U	UG/KG	TOXAPHENE
36U	UG/KG	PCB-1016 (AROCLOR 1016)
74U	UG/KG	PCB-1221 (AROCLOR 1221)
36U	UG/KG	PCB-1232 (AROCLOR 1232)
36U	UG/KG	PCB-1242 (AROCLOR 1242)
36U	UG/KG	PCB-1248 (AROCLOR 1248)
36U	UG/KG	PCB-1254 (AROCLOR 1254)
36U	UG/KG	PCB-1260 (AROCLOR 1260)
10	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4779 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SB /

MD No: 0J41

Inorg Contractor: SENTIN

Media: SUBSURFACE SOIL (&gt; 12")

D No: 0J41

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 12:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.4U	UG/KG	ALPHA-BHC
2.4U	UG/KG	BETA-BHC
2.4U	UG/KG	DELTA-BHC
2.4U	UG/KG	GAMMA-BHC (LINDANE)
2.4U	UG/KG	HEPTACHLOR
2.4U	UG/KG	ALDRIN
2.4U	UG/KG	HEPTACHLOR EPOXIDE
2.4UR	UG/KG	ENDOSULFAN I (ALPHA)
4.7U	UG/KG	DIELDRIN
4.7U	UG/KG	4,4'-DDE (P,P'-DDE)
4.7U	UG/KG	ENDRIN
4.7U	UG/KG	ENDOSULFAN II (BETA)
4.7U	UG/KG	4,4'-DDD (P,P'-DDD)
4.7U	UG/KG	ENDOSULFAN SULFATE
4.7UJ	UG/KG	4,4'-DDT (P,P'-DDT)
24U	UG/KG	METHOXYCHLOR
4.7U	UG/KG	ENDRIN KETONE
4.7U	UG/KG	ENDRIN ALDEHYDE
2.4U	UG/KG	ALPHA-CHLORDANE /2
2.4U	UG/KG	GAMMA-CHLORDANE /2
240U	UG/KG	TOXAPHENE
47U	UG/KG	PCB-1016 (AROCLOR 1016)
96U	UG/KG	PCB-1221 (AROCLOR 1221)
47U	UG/KG	PCB-1232 (AROCLOR 1232)
47U	UG/KG	PCB-1242 (AROCLOR 1242)
47U	UG/KG	PCB-1248 (AROCLOR 1248)
47U	UG/KG	PCB-1254 (AROCLOR 1254)
47U	UG/KG	PCB-1260 (AROCLOR 1260)
31	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4820 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01GW /

MD No: 0J82

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J82

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/04/2001 11:25

Ending:

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10U	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10U	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE /2
0.050U	UG/L	GAMMA-CHLORDANE /2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4782 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC02GW / MD No: 0J44

Media: GROUNDWATER D No: 0J44

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE
0.050UJ	UG/L	ALPHA-BHC
0.050UJ	UG/L	BETA-BHC
0.050UJ	UG/L	DELTA-BHC
0.050UJ	UG/L	GAMMA-BHC (LINDANE)
0.050UJ	UG/L	HEPTACHLOR
0.050UJ	UG/L	ALDRIN
0.050UJ	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10UJ	UG/L	DIELDRIN
0.10UJ	UG/L	4,4'-DDE (P,P'-DDE)
0.10UJ	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10UJ	UG/L	4,4'-DDD (P,P'-DDD)
0.10UJ	UG/L	ENDOSULFAN SULFATE
0.10UJ	UG/L	4,4'-DDT (P,P'-DDT)
0.50UJ	UG/L	METHOXYCHLOR
0.10UJ	UG/L	ENDRIN KETONE
0.10UJ	UG/L	ENDRIN ALDEHYDE
0.050UJ	UG/L	ALPHA-CHLORDANE /2
0.050UJ	UG/L	GAMMA-CHLORDANE /2
5.0UJ	UG/L	TOXAPHENE
1.0UJ	UG/L	PCB-1016 (AROCLOR 1016)
2.0UJ	UG/L	PCB-1221 (AROCLOR 1221)
1.0UJ	UG/L	PCB-1232 (AROCLOR 1232)
1.0UJ	UG/L	PCB-1242 (AROCLOR 1242)
1.0UJ	UG/L	PCB-1248 (AROCLOR 1248)
1.0UJ	UG/L	PCB-1254 (AROCLOR 1254)
1.0UJ	UG/L	PCB-1260 (AROCLOR 1260)

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.  
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4821 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03GW /

MD No: 0J83

Inorg Contractor: SENTIN

Media: GROUNDWATER

D.No: 0J83

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/04/2001 12:10

Ending:

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.23N	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.11U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10U	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE /2
0.050U	UG/L	GAMMA-CHLORDANE /2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

U-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

J-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

J-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4811 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04GW /

MD No: 0J73

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J73

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 14:01

Ending:

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10U	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10U	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE /2
0.050U	UG/L	GAMMA-CHLORDANE /2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4808 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC06GW /

MD No: 0J70

D No: 0J70

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:35

Ending:

RESULTS	UNITS	ANALYTE
0.050UJ	UG/L	ALPHA-BHC
0.050UJ	UG/L	BETA-BHC
0.050UJ	UG/L	DELTA-BHC
0.050UJ	UG/L	GAMMA-BHC (LINDANE)
0.050UJ	UG/L	HEPTACHLOR
0.050UJ	UG/L	ALDRIN
0.050UJ	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10UJ	UG/L	DIELDRIN
0.10UJ	UG/L	4,4'-DDE (P,P'-DDE)
0.10UJ	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10UJ	UG/L	4,4'-DDD (P,P'-DDD)
0.10UJ	UG/L	ENDOSULFAN SULFATE
0.10UJ	UG/L	4,4'-DDT (P,P'-DDT)
0.50UJ	UG/L	METHOXYCHLOR
0.10UJ	UG/L	ENDRIN KETONE
0.10UJ	UG/L	ENDRIN ALDEHYDE
0.050UJ	UG/L	ALPHA-CHLORDANE /2
0.050UJ	UG/L	GAMMA-CHLORDANE /2
5.0UJ	UG/L	TOXAPHENE
1.0UJ	UG/L	PCB-1016 (AROCLOR 1016)
2.0UJ	UG/L	PCB-1221 (AROCLOR 1221)
1.0UJ	UG/L	PCB-1232 (AROCLOR 1232)
1.0UJ	UG/L	PCB-1242 (AROCLOR 1242)
1.0UJ	UG/L	PCB-1248 (AROCLOR 1248)
1.0UJ	UG/L	PCB-1254 (AROCLOR 1254)
1.0UJ	UG/L	PCB-1260 (AROCLOR 1260)

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.  
-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4783 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07GW /

MD No: 0J45

Inorg Contractor: SENTIN

Media: GROUNDWATER

D No: 0J45

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 16:30

Ending:

RESULTS	UNITS	ANALYTE
0.063UJ	UG/L	ALPHA-BHC
0.063UJ	UG/L	BETA-BHC
0.063UJ	UG/L	DELTA-BHC
0.063UJ	UG/L	GAMMA-BHC (LINDANE)
0.063UJ	UG/L	HEPTACHLOR
0.063UJ	UG/L	ALDRIN
0.063UJ	UG/L	HEPTACHLOR EPOXIDE
0.063UJ	UG/L	ENDOSULFAN I (ALPHA)
0.13UJ	UG/L	DIELDRIN
0.13UJ	UG/L	4,4'-DDE (P,P'-DDE)
0.13UJ	UG/L	ENDRIN
0.13UJ	UG/L	ENDOSULFAN II (BETA)
0.13UJ	UG/L	4,4'-DDD (P,P'-DDD)
0.13UJ	UG/L	ENDOSULFAN SULFATE
0.13UJ	UG/L	4,4'-DDT (P,P'-DDT)
0.63UJ	UG/L	METHOXYCHLOR
0.13UJ	UG/L	ENDRIN KETONE
0.13UJ	UG/L	ENDRIN ALDEHYDE
0.063UJ	UG/L	ALPHA-CHLORDANE /2
0.063UJ	UG/L	GAMMA-CHLORDANE /2
6.3UJ	UG/L	TOXAPHENE
1.3UJ	UG/L	PCB-1016 (AROCLOR 1016)
2.5UJ	UG/L	PCB-1221 (AROCLOR 1221)
1.3UJ	UG/L	PCB-1232 (AROCLOR 1232)
1.3UJ	UG/L	PCB-1242 (AROCLOR 1242)
1.3UJ	UG/L	PCB-1248 (AROCLOR 1248)
1.3UJ	UG/L	PCB-1254 (AROCLOR 1254)
1.3UJ	UG/L	PCB-1260 (AROCLOR 1260)

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4784 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC09GW /

Media: GROUNDWATER

Case No: 29099

MD No: 0J46

D No: 0J46

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 09:55

Ending:

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10U	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10U	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE /2
0.050U	UG/L	GAMMA-CHLORDANE /2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.  
-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4365 FY 2001 Project: 01-0529

## PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC01MW /

Media: GROUNDWATER

Produced by: Revells, Lavon

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:40

Ending:

RESULTS	UNITS	ANALYTE
0.020U	UG/L	ALDRIN
0.020U	UG/L	HEPTACHLOR
0.020U	UG/L	HEPTACHLOR EPOXIDE
0.020U	UG/L	ALPHA-BHC
0.020U	UG/L	BETA-BHC
0.020U	UG/L	GAMMA-BHC (LINDANE)
0.020U	UG/L	DELTA-BHC
0.020U	UG/L	ENDOSULFAN I (ALPHA)
0.020U	UG/L	DIELDRIN
0.050U	UG/L	4,4'-DDT (P,P'-DDT)
0.020U	UG/L	4,4'-DDE (P,P'-DDE)
0.050U	UG/L	4,4'-DDD (P,P'-DDD)
0.050UJ	UG/L	ENDRIN
0.050U	UG/L	ENDOSULFAN II (BETA)
0.050U	UG/L	ENDOSULFAN SULFATE
0.25U	UG/L	PCB-1242 (AROCLOR 1242)
0.25U	UG/L	PCB-1254 (AROCLOR 1254)
0.25U	UG/L	PCB-1221 (AROCLOR 1221)
0.25U	UG/L	PCB-1232 (AROCLOR 1232)
0.25U	UG/L	PCB-1248 (AROCLOR 1248)
0.25U	UG/L	PCB-1260 (AROCLOR 1260)
0.25U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	TOXAPHENE
0.020U	UG/L	CHLORDENE /2
0.020U	UG/L	ALPHA-CHLORDENE /2
NA	UG/L	BETA-CHLORDENE /2
NA	UG/L	GAMMA-CHLORDENE /2
0.020U	UG/L	GAMMA-CHLORDANE /2
0.020U	UG/L	TRANS-NONACHLOR /2
0.020U	UG/L	ALPHA-CHLORDANE /2
0.020U	UG/L	CIS-NONACHLOR /2
0.020U	UG/L	OXYCHLORDANE (OCTACHLOR EPOXIDE) /2
0.10U	UG/L	METHOXYCHLOR
0.050U	UG/L	ENDRIN KETONE

QUANT. IS SUSPECT BASED ON QC DATA

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4364 FY 2001 Project: 01-0529

## PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC02MW /

Media: GROUNDWATER

Produced by: Revells, Lavon

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:05

Ending:

RESULTS	UNITS	ANALYTE
0.020U	UG/L	ALDRIN
0.020U	UG/L	HEPTACHLOR
0.020U	UG/L	HEPTACHLOR EPOXIDE
0.020U	UG/L	ALPHA-BHC
0.020U	UG/L	BETA-BHC
0.020U	UG/L	GAMMA-BHC (LINDANE)
0.020U	UG/L	DELTA-BHC
0.020U	UG/L	ENDOSULFAN I (ALPHA)
0.020U	UG/L	DIELDRIN
0.050U	UG/L	4,4'-DDT (P,P'-DDT)
0.020U	UG/L	4,4'-DDE (P,P'-DDE)
0.050U	UG/L	4,4'-DDD (P,P'-DDD)
0.050UJ	UG/L	ENDRIN
0.050U	UG/L	ENDOSULFAN II (BETA)
0.050U	UG/L	ENDOSULFAN SULFATE
0.25U	UG/L	PCB-1242 (AROCLOR 1242)
0.25U	UG/L	PCB-1254 (AROCLOR 1254)
0.25U	UG/L	PCB-1221 (AROCLOR 1221)
0.25U	UG/L	PCB-1232 (AROCLOR 1232)
0.25U	UG/L	PCB-1248 (AROCLOR 1248)
0.25U	UG/L	PCB-1260 (AROCLOR 1260)
0.25U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	TOXAPHENE
0.020U	UG/L	CHLORDENE /2
0.020U	UG/L	ALPHA-CHLORDENE /2
NA	UG/L	BETA-CHLORDENE /2
NA	UG/L	GAMMA-CHLORDENE /2
0.020U	UG/L	GAMMA-CHLORDANE /2
0.020U	UG/L	TRANS-NONACHLOR /2
0.020U	UG/L	ALPHA-CHLORDANE /2
0.020U	UG/L	CIS-NONACHLOR /2
0.020U	UG/L	OXYCHLORDANE (OCTACHLOREPOXIDE) /2
0.10U	UG/L	METHOXYCHLOR
0.050U	UG/L	ENDRIN KETONE

QUANT. IS SUSPECT BASED ON QC DATA

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4816 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01SW /

MD No: 0J78

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J78

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

RESULTS	UNITS	ANALYTE
NA	UG/L	ALPHA-BHC
NA	UG/L	BETA-BHC
NA	UG/L	DELTA-BHC
NA	UG/L	GAMMA-BHC (LINDANE)
NA	UG/L	HEPTACHLOR
NA	UG/L	ALDRIN
NA	UG/L	HEPTACHLOR EPOXIDE
NA	UG/L	ENDOSULFAN I (ALPHA)
NA	UG/L	DIELDRIN
NA	UG/L	4,4'-DDE (P,P'-DDE)
NA	UG/L	ENDRIN
NA	UG/L	ENDOSULFAN II (BETA)
NA	UG/L	4,4'-DDD (P,P'-DDD)
NA	UG/L	ENDOSULFAN SULFATE
NA	UG/L	4,4'-DDT (P,P'-DDT)
NA	UG/L	METHOXYCHLOR
NA	UG/L	ENDRIN KETONE
NA	UG/L	ENDRIN ALDEHYDE
NA	UG/L	ALPHA-CHLORDANE /2
NA	UG/L	GAMMA-CHLORDANE /2
NA	UG/L	TOXAPHENE
NA	UG/L	PCB-1016 (AROCLOR 1016)
NA	UG/L	PCB-1221 (AROCLOR 1221)
NA	UG/L	PCB-1232 (AROCLOR 1232)
NA	UG/L	PCB-1242 (AROCLOR 1242)
NA	UG/L	PCB-1248 (AROCLOR 1248)
NA	UG/L	PCB-1254 (AROCLOR 1254)
NA	UG/L	PCB-1260 (AROCLOR 1260)

AMPLE CONTAINER BROKEN WHEN RECEIVED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4817 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC01ASW / MD No: 0J79

Media: SURFACE WATER D No: 0J79

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10U	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10U	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE /2
0.050U	UG/L	GAMMA-CHLORDANE /2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

Sample 4812 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02SW /

MD No: 0J74

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J74

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:30

Ending:

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10U	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10U	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE /2
0.050U	UG/L	GAMMA-CHLORDANE /2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4813 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC03SW / MD No: 0J75

Media: SURFACE WATER D No: 0J75

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:45

Ending:

RESULTS	UNITS	ANALYTE
NA	UG/L	ALPHA-BHC
NA	UG/L	BETA-BHC
NA	UG/L	DELTA-BHC
NA	UG/L	GAMMA-BHC (LINDANE)
NA	UG/L	HEPTACHLOR
NA	UG/L	ALDRIN
NA	UG/L	HEPTACHLOR EPOXIDE
NA	UG/L	ENDOSULFAN I (ALPHA)
NA	UG/L	DIELDRIN
NA	UG/L	4,4'-DDE (P,P'-DDE)
NA	UG/L	ENDRIN
NA	UG/L	ENDOSULFAN II (BETA)
NA	UG/L	4,4'-DDD (P,P'-DDD)
NA	UG/L	ENDOSULFAN SULFATE
NA	UG/L	4,4'-DDT (P,P'-DDT)
NA	UG/L	METHOXYCHLOR
NA	UG/L	ENDRIN KETONE
NA	UG/L	ENDRIN ALDEHYDE
NA	UG/L	ALPHA-CHLORDANE 1/2
NA	UG/L	GAMMA-CHLORDANE 1/2
NA	UG/L	TOXAPHENE
NA	UG/L	PCB-1016 (AROCLOR 1016)
NA	UG/L	PCB-1221 (AROCLOR 1221)
NA	UG/L	PCB-1232 (AROCLOR 1232)
NA	UG/L	PCB-1242 (AROCLOR 1242)
NA	UG/L	PCB-1248 (AROCLOR 1248)
NA	UG/L	PCB-1254 (AROCLOR 1254)
NA	UG/L	PCB-1260 (AROCLOR 1260)

SAMPLE CONTAINER BROKEN WHEN RECEIVED.

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.  
-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

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Sample 4814 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC04SW /

MD No: 0J76

Media: SURFACE WATER

D No: 0J76

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:20

Ending:

RESULTS	UNITS	ANALYTE
NA	UG/L	ALPHA-BHC
NA	UG/L	BETA-BHC
NA	UG/L	DELTA-BHC
NA	UG/L	GAMMA-BHC (LINDANE)
NA	UG/L	HEPTACHLOR
NA	UG/L	ALDRIN
NA	UG/L	HEPTACHLOR EPOXIDE
NA	UG/L	ENDOSULFAN I (ALPHA)
NA	UG/L	DIELDRIN
NA	UG/L	4,4'-DDE (P,P'-DDE)
NA	UG/L	ENDRIN
NA	UG/L	ENDOSULFAN II (BETA)
NA	UG/L	4,4'-DDD (P,P'-DDD)
NA	UG/L	ENDOSULFAN SULFATE
NA	UG/L	4,4'-DDT (P,P'-DDT)
NA	UG/L	METHOXYCHLOR
NA	UG/L	ENDRIN KETONE
NA	UG/L	ENDRIN ALDEHYDE
NA	UG/L	ALPHA-CHLORDANE /2
NA	UG/L	GAMMA-CHLORDANE /2
NA	UG/L	TOXAPHENE
NA	UG/L	PCB-1016 (AROCLOR 1016)
NA	UG/L	PCB-1221 (AROCLOR 1221)
NA	UG/L	PCB-1232 (AROCLOR 1232)
NA	UG/L	PCB-1242 (AROCLOR 1242)
NA	UG/L	PCB-1248 (AROCLOR 1248)
NA	UG/L	PCB-1254 (AROCLOR 1254)
NA	UG/L	PCB-1260 (AROCLOR 1260)

SAMPLE CONTAINER BROKEN WHEN RECEIVED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4800 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC05SW / MD No: 0J62

Media: SURFACE WATER D No: 0J62

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 09:15

Ending:

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10U	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10U	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE /2
0.050U	UG/L	GAMMA-CHLORDANE /2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

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Sample 4785 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC08SW /

MD No: 0J47

Inorg Contractor: SENTIN

Media: SURFACE WATER

D No: 0J47

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:05

Ending:

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10U	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10UJ	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE /2
0.050U	UG/L	GAMMA-CHLORDANE /2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

C-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

C-confirmed by gcms: 1.when no value is reported, see chlrdane constituents 2.constituents or metabolites of technical chlrdane

Sample 4792 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC09SW / MD No: 0J54

Media: SURFACE WATER D.No: 0J54

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 12:40

Ending:

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

RESULTS	UNITS	ANALYTE
0.050U	UG/L	ALPHA-BHC
0.050U	UG/L	BETA-BHC
0.050U	UG/L	DELTA-BHC
0.050U	UG/L	GAMMA-BHC (LINDANE)
0.050U	UG/L	HEPTACHLOR
0.050U	UG/L	ALDRIN
0.050U	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10U	UG/L	DIELDRIN
0.10U	UG/L	4,4'-DDE (P,P'-DDE)
0.10U	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10U	UG/L	4,4'-DDD (P,P'-DDD)
0.10U	UG/L	ENDOSULFAN SULFATE
0.10UJ	UG/L	4,4'-DDT (P,P'-DDT)
0.50U	UG/L	METHOXYCHLOR
0.10U	UG/L	ENDRIN KETONE
0.10U	UG/L	ENDRIN ALDEHYDE
0.050U	UG/L	ALPHA-CHLORDANE 1/2
0.050U	UG/L	GAMMA-CHLORDANE 1/2
5.0U	UG/L	TOXAPHENE
1.0U	UG/L	PCB-1016 (AROCLOR 1016)
2.0U	UG/L	PCB-1221 (AROCLOR 1221)
1.0U	UG/L	PCB-1232 (AROCLOR 1232)
1.0U	UG/L	PCB-1242 (AROCLOR 1242)
1.0U	UG/L	PCB-1248 (AROCLOR 1248)
1.0U	UG/L	PCB-1254 (AROCLOR 1254)
1.0U	UG/L	PCB-1260 (AROCLOR 1260)

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.  
L-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.  
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.  
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

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Sample 4818 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01SD /

MD No: 0J80

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J80

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:15

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.9U	UG/KG	ALPHA-BHC
2.9U	UG/KG	BETA-BHC
2.9U	UG/KG	DELTA-BHC
2.9U	UG/KG	GAMMA-BHC (LINDANE)
2.9U	UG/KG	HEPTACHLOR
2.9U	UG/KG	ALDRIN
2.9U	UG/KG	HEPTACHLOR EPOXIDE
2.9UR	UG/KG	ENDOSULFAN I (ALPHA)
5.5U	UG/KG	DIELDRIN
5.5U	UG/KG	4,4'-DDE (P,P'-DDE)
5.5U	UG/KG	ENDRIN
5.5U	UG/KG	ENDOSULFAN II (BETA)
5.5U	UG/KG	4,4'-DDD (P,P'-DDD)
5.5U	UG/KG	ENDOSULFAN SULFATE
5.5U	UG/KG	4,4'-DDT (P,P'-DDT)
29U	UG/KG	METHOXYCHLOR
5.5U	UG/KG	ENDRIN KETONE
5.5U	UG/KG	ENDRIN ALDEHYDE
2.9U	UG/KG	ALPHA-CHLORDANE /2
2.9U	UG/KG	GAMMA-CHLORDANE /2
290U	UG/KG	TOXAPHENE
55U	UG/KG	PCB-1016 (AROCLOR 1016)
110U	UG/KG	PCB-1221 (AROCLOR 1221)
55U	UG/KG	PCB-1232 (AROCLOR 1232)
55U	UG/KG	PCB-1242 (AROCLOR 1242)
55U	UG/KG	PCB-1248 (AROCLOR 1248)
55U	UG/KG	PCB-1254 (AROCLOR 1254)
55U	UG/KG	PCB-1260 (AROCLOR 1260)
41	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4799 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Programs: SF

Case No: 29099

Id/Station: LC02SD /

MD No: 0J61

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J61

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:30

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.5U	UG/KG	ALPHA-BHC
2.5U	UG/KG	BETA-BHC
2.5U	UG/KG	DELTA-BHC
2.5U	UG/KG	GAMMA-BHC (LINDANE)
2.5U	UG/KG	HEPTACHLOR
2.5U	UG/KG	ALDRIN
2.5U	UG/KG	HEPTACHLOR EPOXIDE
2.5UR	UG/KG	ENDOSULFAN I (ALPHA)
4.8U	UG/KG	DIELDRIN
4.8U	UG/KG	4,4'-DDE (P,P'-DDE)
4.8U	UG/KG	ENDRIN
4.8U	UG/KG	ENDOSULFAN II (BETA)
4.8U	UG/KG	4,4'-DDD (P,P'-DDD)
4.8U	UG/KG	ENDOSULFAN SULFATE
4.8U	UG/KG	4,4'-DDT (P,P'-DDT)
25U	UG/KG	METHOXYCHLOR
4.8U	UG/KG	ENDRIN KETONE
4.8U	UG/KG	ENDRIN ALDEHYDE
2.5U	UG/KG	ALPHA-CHLORDANE /2
2.5U	UG/KG	GAMMA-CHLORDANE /2
250U	UG/KG	TOXAPHENE
48U	UG/KG	PCB-1016 (AROCLOR 1016)
97U	UG/KG	PCB-1221 (AROCLOR 1221)
48U	UG/KG	PCB-1232 (AROCLOR 1232)
48U	UG/KG	PCB-1242 (AROCLOR 1242)
48U	UG/KG	PCB-1248 (AROCLOR 1248)
48U	UG/KG	PCB-1254 (AROCLOR 1254)
48U	UG/KG	PCB-1260 (AROCLOR 1260)
32	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4798 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC03SD /

MD No: 0J60

Media: SEDIMENT

D No: 0J60

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 17:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4.4N	UG/KG	ALPHA-BHC
4.1U	UG/KG	BETA-BHC
4.1U	UG/KG	DELTA-BHC
4.1U	UG/KG	GAMMA-BHC (LINDANE)
4.1U	UG/KG	HEPTACHLOR
9.7U	UG/KG	ALDRIN
4.1U	UG/KG	HEPTACHLOR EPOXIDE
4.1UR	UG/KG	ENDOSULFAN I (ALPHA)
19N	UG/KG	DIELDRIN
8.0U	UG/KG	4,4'-DDE (P,P'-DDE)
8.0U	UG/KG	ENDRIN
8.0U	UG/KG	ENDOSULFAN II (BETA)
8.0U	UG/KG	4,4'-DDD (P,P'-DDD)
8.0U	UG/KG	ENDOSULFAN SULFATE
8.0U	UG/KG	4,4'-DDT (P,P'-DDT)
41U	UG/KG	METHOXYCHLOR
8.0U	UG/KG	ENDRIN KETONE
8.0U	UG/KG	ENDRIN ALDEHYDE
4.1U	UG/KG	ALPHA-CHLORDANE /2
4.1U	UG/KG	GAMMA-CHLORDANE /2
410U	UG/KG	TOXAPHENE
80U	UG/KG	PCB-1016 (AROCLOR 1016)
160U	UG/KG	PCB-1221 (AROCLOR 1221)
80U	UG/KG	PCB-1232 (AROCLOR 1232)
80U	UG/KG	PCB-1242 (AROCLOR 1242)
80U	UG/KG	PCB-1248 (AROCLOR 1248)
230	UG/KG	PCB-1254 (AROCLOR 1254)
80U	UG/KG	PCB-1260 (AROCLOR 1260)
59	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4797 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC04SD /

Media: SEDIMENT

Case No: 29099

MD No: 0J59

D No: 0J59

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 18:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.8U	UG/KG	ALPHA-BHC
2.8U	UG/KG	BETA-BHC
2.8U	UG/KG	DELTA-BHC
2.8U	UG/KG	GAMMA-BHC (LINDANE)
2.8U	UG/KG	HEPTACHLOR
2.8U	UG/KG	ALDRIN
2.8U	UG/KG	HEPTACHLOR EPOXIDE
2.8UR	UG/KG	ENDOSULFAN I (ALPHA)
5.3U	UG/KG	DIELDRIN
5.3U	UG/KG	4,4'-DDE (P,P'-DDE)
5.3U	UG/KG	ENDRIN
5.3U	UG/KG	ENDOSULFAN II (BETA)
5.3U	UG/KG	4,4'-DDD (P,P'-DDD)
5.3U	UG/KG	ENDOSULFAN SULFATE
5.3U	UG/KG	4,4'-DDT (P,P'-DDT)
28U	UG/KG	METHOXYCHLOR
5.3U	UG/KG	ENDRIN KETONE
5.3U	UG/KG	ENDRIN ALDEHYDE
2.8U	UG/KG	ALPHA-CHLORDANE /2
2.8U	UG/KG	GAMMA-CHLORDANE /2
280U	UG/KG	TOXAPHENE
53U	UG/KG	PCB-1016 (AROCLOR 1016)
110U	UG/KG	PCB-1221 (AROCLOR 1221)
53U	UG/KG	PCB-1232 (AROCLOR 1232)
53U	UG/KG	PCB-1242 (AROCLOR 1242)
53U	UG/KG	PCB-1248 (AROCLOR 1248)
53U	UG/KG	PCB-1254 (AROCLOR 1254)
53U	UG/KG	PCB-1260 (AROCLOR 1260)
39	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4815 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC05SD /

MD No: 0J77

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J77

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 15:05

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
4.0UJ	UG/KG	ALPHA-BHC
4.0UJ	UG/KG	BETA-BHC
4.0UJ	UG/KG	DELTA-BHC
4.0UJ	UG/KG	GAMMA-BHC (LINDANE)
4.0UJ	UG/KG	HEPTACHLOR
4.0UJ	UG/KG	ALDRIN
4.0UJ	UG/KG	HEPTACHLOR EPOXIDE
4.0UR	UG/KG	ENDOSULFAN I (ALPHA)
7.8UJ	UG/KG	DIELDRIN
7.8UJ	UG/KG	4,4'-DDE (P,P'-DDE)
7.8UJ	UG/KG	ENDRIN
7.8UJ	UG/KG	ENDOSULFAN II (BETA)
7.8UJ	UG/KG	4,4'-DDD (P,P'-DDD)
7.8UJ	UG/KG	ENDOSULFAN SULFATE
7.8UJ	UG/KG	4,4'-DDT (P,P'-DDT)
40UJ	UG/KG	METHOXYCHLOR
7.8UJ	UG/KG	ENDRIN KETONE
7.8UJ	UG/KG	ENDRIN ALDEHYDE
4.0UJ	UG/KG	ALPHA-CHLORDANE /2
4.0UJ	UG/KG	GAMMA-CHLORDANE /2
400UJ	UG/KG	TOXAPHENE
78UJ	UG/KG	PCB-1016 (AROCLOR 1016)
160UJ	UG/KG	PCB-1221 (AROCLOR 1221)
78UJ	UG/KG	PCB-1232 (AROCLOR 1232)
78UJ	UG/KG	PCB-1242 (AROCLOR 1242)
78UJ	UG/KG	PCB-1248 (AROCLOR 1248)
78UJ	UG/KG	PCB-1254 (AROCLOR 1254)
78UJ	UG/KG	PCB-1260 (AROCLOR 1260)
58	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4809 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF

Id/Station: LC08SD - *Actually LC-06-SD (See report 2, p. 24)*

Media: SEDIMENT

Case No: 29099

MD No: 0J71

D No: 0J71

Inorg Contractor: SENTIN

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 12:30 - *Actually LC-06-SD*

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
5.2U	UG/KG	ALPHA-BHC
5.2U	UG/KG	BETA-BHC
5.2U	UG/KG	DELTA-BHC
5.2U	UG/KG	GAMMA-BHC (LINDANE)
5.2U	UG/KG	HEPTACHLOR
5.2U	UG/KG	ALDRIN
5.2U	UG/KG	HEPTACHLOR EPOXIDE
5.2UR	UG/KG	ENDOSULFAN I (ALPHA)
10U	UG/KG	DIELDRIN
10U	UG/KG	4,4'-DDE (P,P'-DDE)
10U	UG/KG	ENDRIN
10U	UG/KG	ENDOSULFAN II (BETA)
10U	UG/KG	4,4'-DDD (P,P'-DDD)
10U	UG/KG	ENDOSULFAN SULFATE
10U	UG/KG	4,4'-DDT (P,P'-DDT)
52U	UG/KG	METHOXYCHLOR
10U	UG/KG	ENDRIN KETONE
10U	UG/KG	ENDRIN ALDEHYDE
5.2U	UG/KG	ALPHA-CHLORDANE /2
5.2U	UG/KG	GAMMA-CHLORDANE /2
520U	UG/KG	TOXAPHENE
100U	UG/KG	PCB-1016 (AROCLOR 1016)
210U	UG/KG	PCB-1221 (AROCLOR 1221)
100U	UG/KG	PCB-1232 (AROCLOR 1232)
100U	UG/KG	PCB-1242 (AROCLOR 1242)
100U	UG/KG	PCB-1248 (AROCLOR 1248)
100U	UG/KG	PCB-1254 (AROCLOR 1254)
100U	UG/KG	PCB-1260 (AROCLOR 1260)
68	%	% MOISTURE

Sample 4810 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC07SD /

MD No: 0J72

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J72

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 13:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.9U	UG/KG	ALPHA-BHC
2.9U	UG/KG	BETA-BHC
2.9U	UG/KG	DELTA-BHC
2.9U	UG/KG	GAMMA-BHC (LINDANE)
2.9U	UG/KG	HEPTACHLOR
2.9U	UG/KG	ALDRIN
2.9U	UG/KG	HEPTACHLOR EPOXIDE
2.9UR	UG/KG	ENDOSULFAN I (ALPHA)
5.7U	UG/KG	DIELDRIN
5.7U	UG/KG	4,4'-DDE (P,P'-DDE)
5.7U	UG/KG	ENDRIN
5.7U	UG/KG	ENDOSULFAN II (BETA)
5.7U	UG/KG	4,4'-DDD (P,P'-DDD)
5.7U	UG/KG	ENDOSULFAN SULFATE
5.7U	UG/KG	4,4'-DDT (P,P'-DDT)
29U	UG/KG	METHOXYCHLOR
5.7U	UG/KG	ENDRIN KETONE
5.7U	UG/KG	ENDRIN ALDEHYDE
2.9U	UG/KG	ALPHA-CHLORDANE /2
2.9U	UG/KG	GAMMA-CHLORDANE /2
290U	UG/KG	TOXAPHENE
57U	UG/KG	PCB-1016 (AROCLOR 1016)
120U	UG/KG	PCB-1221 (AROCLOR 1221)
57U	UG/KG	PCB-1232 (AROCLOR 1232)
57U	UG/KG	PCB-1242 (AROCLOR 1242)
57U	UG/KG	PCB-1248 (AROCLOR 1248)
57U	UG/KG	PCB-1254 (AROCLOR 1254)
57U	UG/KG	PCB-1260 (AROCLOR 1260)
43	%	% MOISTURE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

<-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

C-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4786 FY 2001 Project: 01-0528

PESTICIDES SCAN

Facility: Latex Construction Co Thunderbolt, GA

Program: SF Case No: 29099

Id/Station: LC08SD / MD No: 0J48

Media: SEDIMENT D No: 0J48

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 10:20

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
8.4U	UG/KG	ALPHA-BHC
8.4U	UG/KG	BETA-BHC
8.4U	UG/KG	DELTA-BHC
8.4U	UG/KG	GAMMA-BHC (LINDANE)
8.4U	UG/KG	HEPTACHLOR
8.4U	UG/KG	ALDRIN
8.4U	UG/KG	HEPTACHLOR EPOXIDE
8.4UR	UG/KG	ENDOSULFAN I (ALPHA)
16U	UG/KG	DIELDRIN
16U	UG/KG	4,4'-DDE (P,P'-DDE)
16U	UG/KG	ENDRIN
16U	UG/KG	ENDOSULFAN II (BETA)
16U	UG/KG	4,4'-DDD (P,P'-DDD)
16U	UG/KG	ENDOSULFAN SULFATE
16UJ	UG/KG	4,4'-DDT (P,P'-DDT)
84U	UG/KG	METHOXYCHLOR
16U	UG/KG	ENDRIN KETONE
16U	UG/KG	ENDRIN ALDEHYDE
8.4U	UG/KG	ALPHA-CHLORDANE 1/2
8.4U	UG/KG	GAMMA-CHLORDANE 1/2
840U	UG/KG	TOXAPHENE
160U	UG/KG	PCB-1016 (AROCLOR 1016)
330U	UG/KG	PCB-1221 (AROCLOR 1221)
160U	UG/KG	PCB-1232 (AROCLOR 1232)
160U	UG/KG	PCB-1242 (AROCLOR 1242)
160U	UG/KG	PCB-1248 (AROCLOR 1248)
160U	UG/KG	PCB-1254 (AROCLOR 1254)
160U	UG/KG	PCB-1260 (AROCLOR 1260)
80	%	% MOISTURE

1-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

2-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

3-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

4-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Page 1 of 1

Sample 4793 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC09SD /

MD No: 0J55

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J55

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 13:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
6.2U	UG/KG	ALPHA-BHC
6.2U	UG/KG	BETA-BHC
6.2U	UG/KG	DELTA-BHC
6.2U	UG/KG	GAMMA-BHC (LINDANE)
6.2U	UG/KG	HEPTACHLOR
6.2U	UG/KG	ALDRIN
6.2U	UG/KG	HEPTACHLOR EPOXIDE
6.2UR	UG/KG	ENDOSULFAN I (ALPHA)
12U	UG/KG	DIELDRIN
12U	UG/KG	4,4'-DDE (P,P'-DDE)
12U	UG/KG	ENDRIN
12U	UG/KG	ENDOSULFAN II (BETA)
12U	UG/KG	4,4'-DDD (P,P'-DDD)
12U	UG/KG	ENDOSULFAN SULFATE
12UJ	UG/KG	4,4'-DDT (P,P'-DDT)
62U	UG/KG	METHOXYCHLOR
12U	UG/KG	ENDRIN KETONE
12U	UG/KG	ENDRIN ALDEHYDE
6.2U	UG/KG	ALPHA-CHLORDANE /2
6.2U	UG/KG	GAMMA-CHLORDANE /2
620U	UG/KG	TOXAPHENE
120U	UG/KG	PCB-1016 (AROCLOR 1016)
250U	UG/KG	PCB-1221 (AROCLOR 1221)
120U	UG/KG	PCB-1232 (AROCLOR 1232)
120U	UG/KG	PCB-1242 (AROCLOR 1242)
120U	UG/KG	PCB-1248 (AROCLOR 1248)
120U	UG/KG	PCB-1254 (AROCLOR 1254)
120U	UG/KG	PCB-1260 (AROCLOR 1260)
73	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4794 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC10SD /

MD No: 0J56

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J56

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 16:00

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.4U	UG/KG	ALPHA-BHC
2.4U	UG/KG	BETA-BHC
2.4U	UG/KG	DELTA-BHC
2.4U	UG/KG	GAMMA-BHC (LINDANE)
2.4U	UG/KG	HEPTACHLOR
2.4U	UG/KG	ALDRIN
2.4U	UG/KG	HEPTACHLOR EPOXIDE
2.4UR	UG/KG	ENDOSULFAN I (ALPHA)
4.6U	UG/KG	DIELDRIN
4.6U	UG/KG	4,4'-DDE (P,P'-DDE)
4.6U	UG/KG	ENDRIN
4.6U	UG/KG	ENDOSULFAN II (BETA)
4.6U	UG/KG	4,4'-DDD (P,P'-DDD)
4.6U	UG/KG	ENDOSULFAN SULFATE
4.6U	UG/KG	4,4'-DDT (P,P'-DDT)
24U	UG/KG	METHOXYCHLOR
4.6U	UG/KG	ENDRIN KETONE
4.6U	UG/KG	ENDRIN ALDEHYDE
2.4U	UG/KG	ALPHA-CHLORDANE /2
2.4U	UG/KG	GAMMA-CHLORDANE /2
240U	UG/KG	TOXAPHENE
46U	UG/KG	PCB-1016 (AROCLOR 1016)
94U	UG/KG	PCB-1221 (AROCLOR 1221)
46U	UG/KG	PCB-1232 (AROCLOR 1232)
46U	UG/KG	PCB-1242 (AROCLOR 1242)
46U	UG/KG	PCB-1248 (AROCLOR 1248)
46U	UG/KG	PCB-1254 (AROCLOR 1254)
46U	UG/KG	PCB-1260 (AROCLOR 1260)
30	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4807 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC11SD /

MD No: 0J69

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J69

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 10:45

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
2.1U	UG/KG	ALPHA-BHC
2.1U	UG/KG	BETA-BHC
2.1U	UG/KG	DELTA-BHC
2.1U	UG/KG	GAMMA-BHC (LINDANE)
2.1U	UG/KG	HEPTACHLOR
2.1U	UG/KG	ALDRIN
2.1U	UG/KG	HEPTACHLOR EPOXIDE
2.1UR	UG/KG	ENDOSULFAN I (ALPHA)
4.1U	UG/KG	DIELDRIN
4.1U	UG/KG	4,4'-DDE (P,P'-DDE)
4.1U	UG/KG	ENDRIN
4.1U	UG/KG	ENDOSULFAN II (BETA)
4.1U	UG/KG	4,4'-DDD (P,P'-DDD)
4.1U	UG/KG	ENDOSULFAN SULFATE
4.1U	UG/KG	4,4'-DDT (P,P'-DDT)
21U	UG/KG	METHOXYCHLOR
4.1U	UG/KG	ENDRIN KETONE
4.1U	UG/KG	ENDRIN ALDEHYDE
2.1U	UG/KG	ALPHA-CHLORDANE /2
2.1U	UG/KG	GAMMA-CHLORDANE /2
210U	UG/KG	TOXAPHENE
41U	UG/KG	PCB-1016 (AROCLOR 1016)
84U	UG/KG	PCB-1221 (AROCLOR 1221)
41U	UG/KG	PCB-1232 (AROCLOR 1232)
41U	UG/KG	PCB-1242 (AROCLOR 1242)
41U	UG/KG	PCB-1248 (AROCLOR 1248)
41U	UG/KG	PCB-1254 (AROCLOR 1254)
41U	UG/KG	PCB-1260 (AROCLOR 1260)
21	%	% MOISTURE

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

!-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan.

Sample 4819 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC12SD /

MD No: 0J81

Inorg Contractor: SENTIN

Media: SEDIMENT

D No: 0J81

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/03/2001 17:55

Ending:

DATA REPORTED ON DRY WEIGHT BASIS

RESULTS	UNITS	ANALYTE
3.1U	UG/KG	ALPHA-BHC
3.1U	UG/KG	BETA-BHC
3.1U	UG/KG	DELTA-BHC
3.1U	UG/KG	GAMMA-BHC (LINDANE)
3.1U	UG/KG	HEPTACHLOR
3.1U	UG/KG	ALDRIN
3.1U	UG/KG	HEPTACHLOR EPOXIDE
3.1UR	UG/KG	ENDOSULFAN I (ALPHA)
6.1U	UG/KG	DIELDRIN
6.1U	UG/KG	4,4'-DDE (P,P'-DDE)
6.1U	UG/KG	ENDRIN
6.1U	UG/KG	ENDOSULFAN II (BETA)
6.1U	UG/KG	4,4'-DDD (P,P'-DDD)
6.1U	UG/KG	ENDOSULFAN SULFATE
6.1U	UG/KG	4,4'-DDT (P,P'-DDT)
31U	UG/KG	METHOXYCHLOR
6.1U	UG/KG	ENDRIN KETONE
6.1U	UG/KG	ENDRIN ALDEHYDE
3.1U	UG/KG	ALPHA-CHLORDANE /2
3.1U	UG/KG	GAMMA-CHLORDANE /2
310U	UG/KG	TOXAPHENE
61U	UG/KG	PCB-1016 (AROCLOR 1016)
120U	UG/KG	PCB-1221 (AROCLOR 1221)
61U	UG/KG	PCB-1232 (AROCLOR 1232)
61U	UG/KG	PCB-1242 (AROCLOR 1242)
61U	UG/KG	PCB-1248 (AROCLOR 1248)
61U	UG/KG	PCB-1254 (AROCLOR 1254)
61U	UG/KG	PCB-1260 (AROCLOR 1260)
46	%	% MOISTURE

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

Sample 4775 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC01RB /

MD No: 0J37

Inorg Contractor: SENTIN

Media: EQUIPMENT RINSE BLANK

D No: 0J37

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 03/30/2001 10:10

Ending:

RESULTS	UNITS	ANALYTE
0.050UJ	UG/L	ALPHA-BHC
0.050UJ	UG/L	BETA-BHC
0.050UJ	UG/L	DELTA-BHC
0.050UJ	UG/L	GAMMA-BHC (LINDANE)
0.050UJ	UG/L	HEPTACHLOR
0.050UJ	UG/L	ALDRIN
0.050UJ	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10UJ	UG/L	DIELDRIN
0.10UJ	UG/L	4,4'-DDE (P,P'-DDE)
0.10UJ	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10UJ	UG/L	4,4'-DDD (P,P'-DDD)
0.10UJ	UG/L	ENDOSULFAN SULFATE
0.10UJ	UG/L	4,4'-DDT (P,P'-DDT)
0.50UJ	UG/L	METHOXYCHLOR
0.10UJ	UG/L	ENDRIN KETONE
0.10UJ	UG/L	ENDRIN ALDEHYDE
0.050UJ	UG/L	ALPHA-CHLORDANE /2
0.050UJ	UG/L	GAMMA-CHLORDANE /2
5.0UJ	UG/L	TOXAPHENE
1.0UJ	UG/L	PCB-1016 (AROCLOR 1016)
2.0UJ	UG/L	PCB-1221 (AROCLOR 1221)
1.0UJ	UG/L	PCB-1232 (AROCLOR 1232)
1.0UJ	UG/L	PCB-1242 (AROCLOR 1242)
1.0UJ	UG/L	PCB-1248 (AROCLOR 1248)
1.0UJ	UG/L	PCB-1254 (AROCLOR 1254)
1.0UJ	UG/L	PCB-1260 (AROCLOR 1260)

average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected, the number is the minimum quantitation limit.

qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4787 FY 2001 Project: 01-0528

## PESTICIDES SCAN

Facility: Latex Construction Co

Thunderbolt, GA

Program: SF

Case No: 29099

Id/Station: LC02RB /

MD No: 0J49

Inorg Contractor: SENTIN

Media: EQUIPMENT RINSE BLANK

D No: 0J49

Org Contractor: CEIMIC

Produced by: McConney, John

Requestor:

Project Leader: CKING

Beginning: 04/02/2001 11:50

Ending:

RESULTS	UNITS	ANALYTE
0.050UJ	UG/L	ALPHA-BHC
0.050UJ	UG/L	BETA-BHC
0.050UJ	UG/L	DELTA-BHC
0.050UJ	UG/L	GAMMA-BHC (LINDANE)
0.050UJ	UG/L	HEPTACHLOR
0.050UJ	UG/L	ALDRIN
0.050UJ	UG/L	HEPTACHLOR EPOXIDE
0.050UJ	UG/L	ENDOSULFAN I (ALPHA)
0.10UJ	UG/L	DIELDRIN
0.10UJ	UG/L	4,4'-DDE (P,P'-DDE)
0.10UJ	UG/L	ENDRIN
0.10UJ	UG/L	ENDOSULFAN II (BETA)
0.10UJ	UG/L	4,4'-DDD (P,P'-DDD)
0.10UJ	UG/L	ENDOSULFAN SULFATE
0.10UJ	UG/L	4,4'-DDT (P,P'-DDT)
0.50UJ	UG/L	METHOXYCHLOR
0.10UJ	UG/L	ENDRIN KETONE
0.10UJ	UG/L	ENDRIN ALDEHYDE
0.050UJ	UG/L	ALPHA-CHLORDANE /2
0.050UJ	UG/L	GAMMA-CHLORDANE /2
5.0UJ	UG/L	TOXAPHENE
1.0UJ	UG/L	PCB-1016 (AROCLOR 1016)
2.0UJ	UG/L	PCB-1221 (AROCLOR 1221)
1.0UJ	UG/L	PCB-1232 (AROCLOR 1232)
1.0UJ	UG/L	PCB-1242 (AROCLOR 1242)
1.0UJ	UG/L	PCB-1248 (AROCLOR 1248)
1.0UJ	UG/L	PCB-1254 (AROCLOR 1254)
1.0UJ	UG/L	PCB-1260 (AROCLOR 1260)

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.

-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.

-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.

-confirmed by gcms: 1.when no value is reported, see chlordan constituents 2.constituents or metabolites of technical chlordan

U.S. EPA REGION IV

# SDMS

## Unscannable Material Target Sheet

DocID: 10724711 Site ID: GAD580803656

Site Name: Zatex Construction Co.

### Nature of Material:

Map: ☒

Computer Disks: ☐

Photos: ☐

CD-ROM: ☐

Blueprints: ☐

Oversized Report: ☐

Slides: ☐

Log Book: ☐

Other (describe): Radius Map

Amount of material: \_\_\_\_\_

\* Please contact the appropriate Records Center to view the material \*

STATE OF GEORGIA  
COUNTY OF CHATHAM

SITE: \_\_\_\_\_  
BREAK: 1.10  
OTHER: vol-2

# WARRANTY DEED

THIS INDENTURE made this 1st day of July 1981 by and between  
278 LATEX CONSTRUCTION COMPANY  
party or parties of the first part, hereinafter referred to as "Grantor", and  
THUNDERBOLT MARINE, INC.  
party or parties of the second part hereinafter referred to as "Grantee", the words "Grantor" and "Grantee" to  
include the neuter, masculine and feminine genders, the singular and the plural;

## WITNESSETH:

FOR AND IN CONSIDERATION of the sum of Ten Dollars in hand paid and other good and valuable consideration delivered to Grantor by Grantee at and before the execution, sealing and delivery hereof, the receipt and sufficiency of which is hereby acknowledged, Grantor, has and hereby does grant, bargain, sell and convey unto Grantee and the heirs, legal representatives, successors and assigns of Grantee

All of those tracts or parcels of land described in Exhibits "A" and "B" attached hereto and made a part hereof by reference.

Chatham County, Georgia

Real Estate Transfer Tax

Paid \$ 1.084.30 Date 1-13-84

Mary E. Helton  
For Clerk of Sup. Court

Filed For Record At 4:34 O'Clock P M. On The  
13 Day Of Mar 1984  
Recorded In Record Book 1251 Folio 278  
On The 13 Day Of Mar 1984

CLERK SUPERIOR COURT, CHATHAM CO., GA.

TO HAVE AND TO HOLD said tract or parcel of land, together with any and all of the rights, members and appurtenances thereof to the same being, belonging or in anywise appertaining to the only proper use, benefit and behoof of the Grantee and the heirs, legal representatives, successors and assigns of Grantee, forever, in fee simple.

GRANTOR SHALL WARRANT and forever defend the right and title to said tract or parcel of land unto the Grantee and the heirs, legal representatives, successors and assigns of Grantee, against the claims of all persons whomsoever.

IN WITNESS WHEREOF, the Grantor has signed and sealed this deed, the day and year first above written.

Signed, Sealed and Delivered in the presence of:

M. M. [Signature]  
(Unofficial Witness)  
M. M. [Signature]  
Notary Public (Sec. Notary Public)  
My Commission Expires Mar. 31, 1984

LATEX CONSTRUCTION COMPANY

[Signature] (SEAL)  
President  
[Signature]  
Secretary

(SEAL)

Attest

(SEAL)

## EXHIBIT A

279

All that certain lot, tract or parcel of land, situate, lying and being in the Town of Thunderbolt, Chatham County, Georgia, and commencing at a point marked by a stone pillar which point is at the intersection of the South line of Falligant Avenue (River Road) and the East line of the former Chapman Road, in the Town of Thunderbolt, said County and State, thence North Eighty-two degrees Fifty-nine minutes East (N 82° 59' E) along the South line of Falligant Avenue (River Road) a distance of Sixty-five and Fifty-eight hundredths (65.58) feet to a point marked by a stake, which point is the POINT OF BEGINNING, thence, continuing North Eighty-two degrees Fifty-nine minutes East (N 82° 59' E) along the South line of Falligant Avenue (River Road) a distance of One Hundred Fifty-seven and Ninety-seven hundredths (157.97) feet to a point of curvature of a curve to the left, having a radius of One Hundred Fifty (150) feet and a central angle of Fifty degrees (50° 00'), thence along the arc of said curve to the left a distance of One Hundred Thirty and Ninety-hundredths (130.90) feet to the point of tangency, thence North Thirty-two degrees Fifty-nine minutes East (N 32° 59' E) along the South line of Falligant Avenue (River Road) a distance of Forty (40) feet to the point of curvature of a curve to the left having a radius of One Hundred Twenty-one and Eighty-six hundredths (121.86) feet, thence along the arc of said curve to the left a distance of One Hundred Twenty and Seventeen-hundredths (120.17) feet to a point marked by an "X" in the concrete, at the intersection of the East line of River Road and the South property line now or formerly of E. J. Toomer; thence North Sixty-two degrees Eleven minutes East (N 62° 11' E) along said property line a distance of One Hundred Two (102) feet, more or less, to the low water line on the West bank of the Wilmington River; thence in a Southeasterly direction, along the low water line on the West bank of the Wilmington River a distance of One Thousand Six Hundred (1,600) feet, more or less, to the low water line on the North Bank of Williamson Creek, thence in a Northwesterly direction along the low water line on the North Bank of Williamson Creek a distance of Two Hundred (200) feet, more or less, thence in a Southerly direction along the low water line on the West bank of Williamson Creek a distance of Eight Hundred Fifty (850) feet, more or less; thence in a Northwesterly direction along the low water line on the North bank of Williamson Creek a distance of Eight Hundred Fifty (850) feet, more or less, to a point on the North boundary line of property now or formerly of Mingledorff; thence North Thirty degrees Forty-five minutes West (N 30° 45' W) along said boundary line a distance of Eight Hundred Seventy-three and Seven-tenths (873.7) feet to a point marked with a concrete monument; thence North Twenty-seven degrees Sixteen minutes West (N 27° 16' W) along the north boundary line of property now or formerly of Mingledorff, a distance of Two Hundred Seventy-seven and Thirty-eight hundredths (277.38) feet to the point of beginning.

The above-described property contains Five and three-tenths (5.3) acres of high ground, Two and three-tenths (2.3) acres, more or less, of strand, Thirteen (13) acres, more or less, of marsh land, and Six and nine-tenths (6.9) acres, more or less, of basin; and as a whole is bounded as follows:

On the North by Falligant Avenue (River Road) and property now or formerly of E. J. Toomer, on the East by the Wilmington River, on the South by Williamson Creek, and on the West by property now or formerly of Mingledorff. For a more particular description of said property reference is hereby made to a map of Thunderbolt Point by Thomas and Hutton Engineering Company dated July 26, 1965, and recorded in Plat Record 2 page 157, in the office of the Clerk of the Superior Court of Chatham County, Georgia.

267

EXHIBIT B

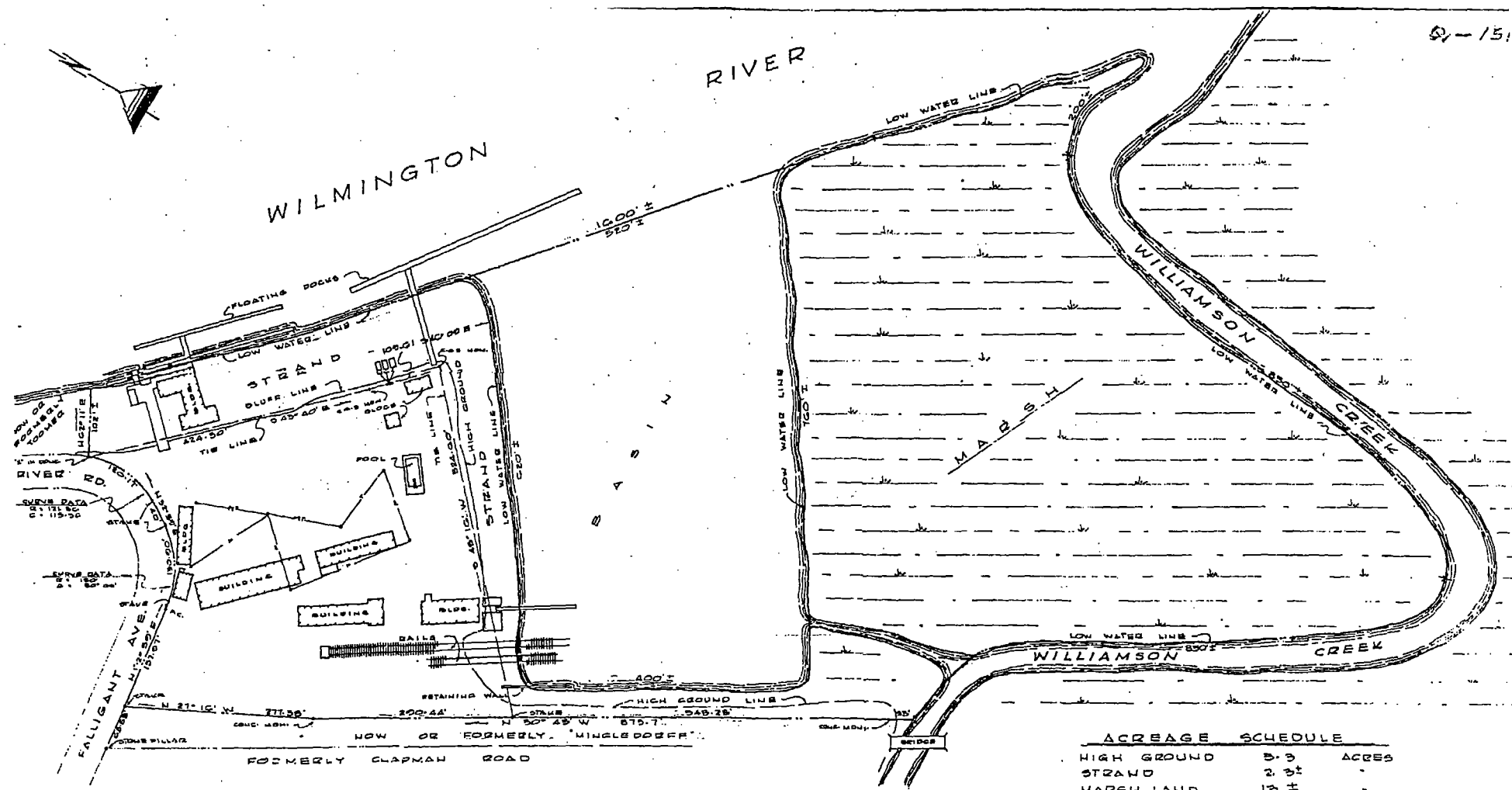
280

ALL that certain lot, tract or parcel of land situate, lying and being in the State of Georgia, County of Chatham, Town of Thunderbolt, being a 5.50 acre parcel of property of a portion of Lots Numbered 9 through 14, inclusive, of the John G. Falligant Estate, of the Placentia Tract, being more particularly described as follows: Commencing at the intersection of the southern right of way line of Falligant Avenue with the Eastern right of way line of Robertson Avenue and running thence along the eastern right of way line of Robertson Avenue South  $43^{\circ} 30'$  East a distance of 515.61 feet to the POINT OF BEGINNING; running thence North  $39^{\circ} 50'$  East a distance of 168.90 feet to a point; running thence North  $36^{\circ} 42' 40''$  West a distance of 49.31 feet to a point; running thence North  $79^{\circ} 56' 20''$  East a distance of 52.86 feet to a point; running thence North  $31^{\circ} 33' 10''$  West a distance of 394.72 feet to the Southern right of way line of Falligant Avenue; running thence along said right of way line North  $83^{\circ} 4'$  East a distance of 156.72 feet to a stake on the western boundary line of a private road; running thence along said boundary line South  $27^{\circ} 16'$  East a distance of 300.45 feet to a stake; continuing thence along said boundary line South  $30^{\circ} 45'$  East a distance of 783.36 feet to a stake; continuing thence along said boundary line South  $30^{\circ} 45'$  East to a point where the High Ground Line intersects said boundary line; running thence westwardly along the High Ground Line to a point where the High Ground Line intersects the prolongation of the eastern boundary line of Robertson Avenue; and running thence along the eastern right of way line of Robertson Avenue North  $43^{\circ} 30'$  West a distance of 628.13 feet to the POINT OF BEGINNING. All of said property will more particularly appear on that certain map or plat of the same, prepared by Wright C. Powers, Land Surveyor, dated August 15, 1979, as recorded in the records of the office of the Clerk of Superior Court in Plat Record Book ΔΔ, Folio 83, to which express reference is hereby made for a more specific description of said property.

ALSO, all of the Party of the First Part's right, title and interest in and to the property within the southward projection of the East and West boundary lines of the marsh portion of said tract as shown on said plat, lying between the High Ground Line and low water mark of Williamson Creek.

The conveyance of this property is made expressly subject to a deed to secure debt dated December 4, 1979 covering said property, executed by Latex Construction Company in favor of Dolly Sikes, recorded in Record Book 113-2, Folio 318-320, of the records of the Clerk of the Superior Court of Chatham County, Georgia.

- 604



ACREAGE SCHEDULE		
HIGH GROUND	5.3	ACRES
STRAND	2.31	"
MARSH LAND	13.1	"
BASIN	6.91	"

NOTES:  
TRAVERSE ERROR OF CLOSURE 1/17,000

STATE OF GEORGIA }  
CHATHAM COUNTY }

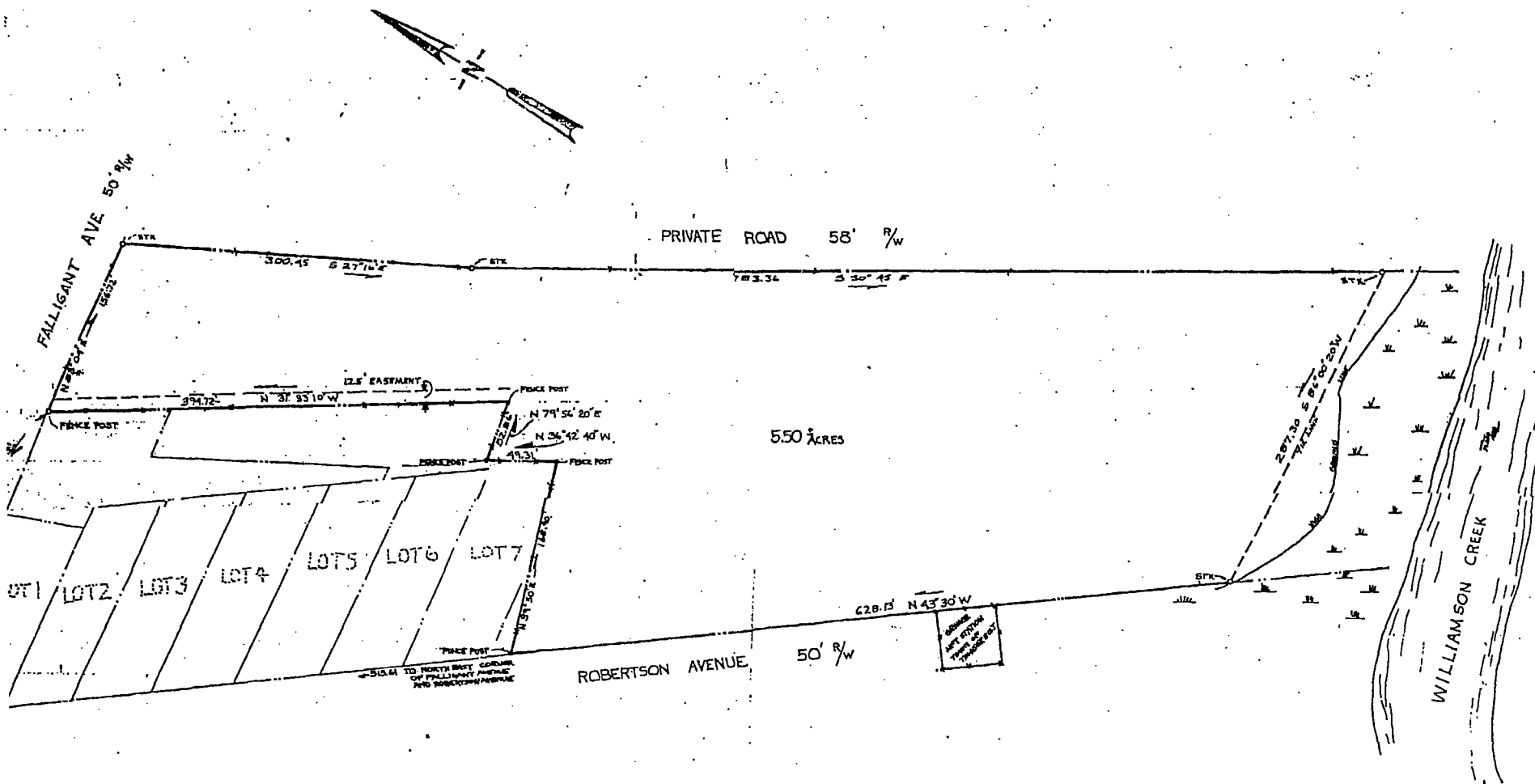
PLAT SHOWING THUNDERBOLT POINT, LYING ON THE WEST BANK OF THE WILMINGTON RIVER, NORTH OF WILLIAMSON CREEK, IN THE TOWN OF THUNDERBOLT CHATHAM COUNTY, GEORGIA.

SURVEYED FOR: LATEX CONSTRUCTION COMPANY OF GEORGIA INC.

THOMAS & HUTTON ENGINEERING CO.  
SAVANNAH, GEORGIA.

I CERTIFY THAT THIS PLAT IS A CORRECT REPRESENTATION OF THE LAND PLATTED, AND WAS CAREFULLY PREPARED IN CONFORMITY WITH THE MINIMUM STANDARDS AND REQUIREMENTS OF LAW.

*Wright C. Jones*  
REGISTERED SURVEYOR



I CERTIFY THAT THIS PLAT IS A CORRECT REPRESENTATION OF THE LAND PLATTED AND HAS BEEN PREPARED IN CONFORMITY WITH THE MINIMUM STANDARDS AND REQUIREMENTS OF LAW.

*Wright C. Powers*

WRIGHT C. POWERS

GEORGIA REGISTERED LAND SURVEYOR NO. 933



PLAT OF PORTIONS OF LOTS 9, 10, 11, 12, 13, AND 14  
OF THE JOHN G. FALLIGANT ESTATE PLACENTIA  
TRACT, LOCATED IN THE TOWN OF THUNDERBOLT  
CHATHAM COUNTY, GEORGIA.

WRIGHT C. POWERS

DD-83

CLOSURE: 1/5,000

SCALE 1"=60'

DATE: AUG. 15, 1979

6  
(DISPOSAL AREA)  
38.67AC

WILMINGTON  
RIVER

WILMINGTON  
RIVER

WILMINGTON  
SILVANISLAND DRIVE

WILMINGTON  
CREEK

WILMINGTON  
CREEK

WILLIAMSON ISLAND  
1  
1027 AC  
(27 AC H)  
(1000 AC M)

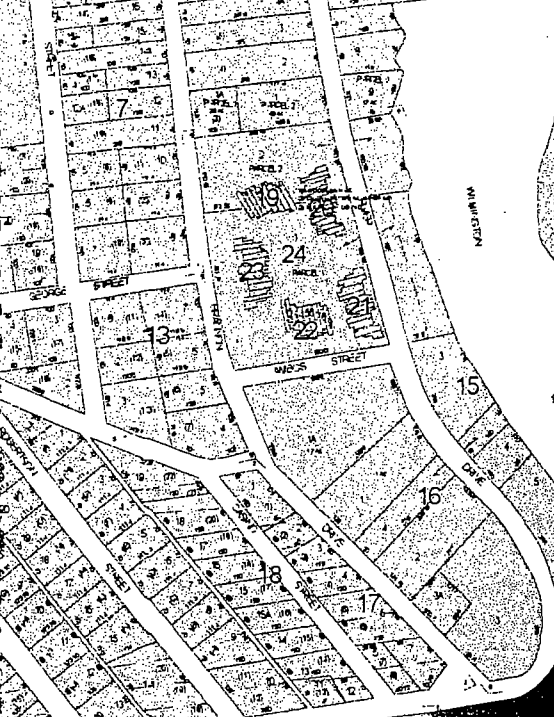
LAKE

HIGHLAND

SILVANISLAND  
DRIVE

CLAIMED BY STATE OF GEORGIA

WILMINGTON  
CITY



**Telephone Contact Summary**  
**Dynamac Corporation**

Call made by: Doug Meade

Signature/Date:

*Doug Meade*  
*8/26/93*

On (Date): August 26, 1993

Facility: Latex Construction Company

At (Time): 11:45 am

CERCLIS No.: GAD980803696

Person(s) contacted: Name: John Hicks

Title/Position: Vice President

Phone: (912) 944-0444

Organization: Savannah Chamber of Commerce

Address (City/State): Savannah, Georgia

Subject: Status of the former Lockheed Shipbuilding (aka Latex Construction) facility

**Conversation Summary**

Mr. Hicks stated that the former Lockheed Shipbuilding facility was now operated as the Palmer Johnson Company. This company repairs and refurbishes luxury yachts. He speculated that the number of workers at the facility was between 50 and 100, but he did not know the exact number.

Reference 4

TELEPHONE CONTACT SUMMARY  
DYNAMAC CORPORATION

CALL MADE BY: Susan L. Rusher REGION: IV  
Dynamac Corporation SITE: Latex  
*Susan L. Rusher 9/15/92* Construction

DATE: September 15, 1992 CERCLIS NO. GAD980803696  
TIME: 1:50 pm

PERSON CONTACTED: NAME Bill Stokes  
TITLE Supervisor Hydrologist  
PHONE 1-706-903-9100  
ORGANIZATION U.S. Geological  
Services  
ADDRESS Athens, Georgia

GENERAL SUBJECT

Types of Surface Water Bodies in the Thunderbolt area.

CONVERSATION SUMMARY

Mr. Stokes described the Wilmington River as a tidally influenced estuarine body of water that during peak hours of high tide may flow at 10,000 cfs. The net flow out to sea would be approximately 1,000 cfs. The Williamson Creek was defined as a minimal stream at less than 10 cfs, but still tidally influenced. The Savannah River flows at greater than 10,000, but not more than 100,000 cfs.

United States  
Environmental Protection  
Agency

Environmental Monitoring  
Systems Laboratory  
P.O. Box 93478  
Las Vegas NV 89193-3478

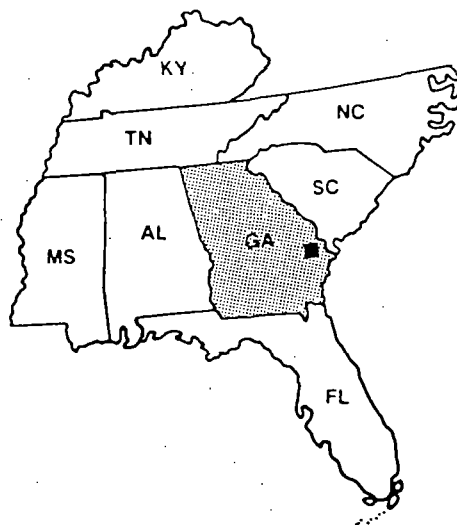
TS-PIC-90939  
June 1991

Research and Development

# EPA Site Analysis Latex Construction Thunderbolt, Georgia

EPA Region 4  
and OERR

Volume 1



TS-PIC-90939  
June 1991

Site Analysis  
Latex Construction  
Thunderbolt, Georgia

Volume 1

by  
Nancy R. Bronson and Rose E. Sullivan, Imagery Analysts  
The Bionetics Corporation  
Warrenton, Virginia 22186

Contract No. 68-03-3532

Project Officer  
Gordon E. Howard, Jr.  
Environmental Photographic Interpretation Center  
Environmental Monitoring Systems Laboratory  
Warrenton, Virginia 22186, FTS 557-3110

ENVIRONMENTAL MONITORING SYSTEMS LABORATORY  
OFFICE OF RESEARCH AND DEVELOPMENT  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
LAS VEGAS, NEVADA 89193-3478

#### NOTICE

This document has undergone a technical and quality control/assurance review and approval by personnel of the EPA/ORD Environmental Monitoring Systems Laboratory at Las Vegas (EMSL-LV), and is for internal Agency use and distribution only.

## ABSTRACT

This report presents an analysis of aerial photography of Latex Construction, a ship building and repair facility, located in Thunderbolt, Georgia. The Environmental Protection Agency's (EPA) Region 4 requested this analysis to identify evidence of activity at Latex Construction that could potentially contaminate the surface water adjacent to the site.

Potential sources of contamination found during the analysis of Latex Construction include numerous light- and dark-toned stains throughout the site; several possible and probable outfalls along Williamson Creek; piles of rusty pipes, horizontal tanks, and drums in open storage; an uncontained blue material; piled waste material; refuse; and possible sandblast waste grit.

A wetlands and drainage analysis was performed for the 1989 photography for an area encompassing a 1-kilometer (0.6-mile) radius of the site.

The EPA's Environmental Photographic Interpretation Center in Warrenton, Virginia, a branch of the Advanced Monitoring Systems Division of the Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, performed this analysis at the request of the Superfund Support Section of EPA Region 4 in Atlanta, Georgia, and the Office of Emergency and Remedial Response in Washington, D.C. This analysis covers the period between 1953 and 1990, and the report was completed in June 1991.

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## INTRODUCTION

This report presents an analysis of aerial photography of the Latex Construction site in Thunderbolt, Georgia. The site, excluding the basin, comprises approximately 10.8 hectares (27 acres) and is bordered by Williamson Creek to the south and by the Wilmington River to the east. The area northwest of the site is the densely populated suburbs of Savannah, while the areas to the south and east are sparsely populated wetlands.

The Environmental Protection Agency's (EPA) Region 4 requested this analysis to identify sources of contamination at Latex Construction which could potentially contaminate the surface water bordering the site.

Figure 1 shows the site location, keyed to a photocopy of a U.S. Geological Survey (USGS) 1:24,000-scale topographic map. Site boundaries used in this analysis were determined from observations made from the aerial photography in conjunction with collateral data supplied by EPA Region 4 and do not necessarily denote legal property lines or ownership.

Aerial photography of the Latex Construction site was obtained to represent the period from 1953 to 1990.<sup>1</sup> Black and white photography from 1953, 1971, 1974, and 1981; color photography from 1977 and 1990; and color infrared photography from 1989 were used for this analysis. Photography from 1977 was analyzed but not reproduced for this report due to the poor resolution of the photography. Any significant changes noted in that year will be annotated and discussed in the following year of photography reproduced in this report.

According to collateral information supplied by EPA Region 4, the Latex Construction Company is a ship building and repair facility for private and commercial vessels. Soil samples taken in 1989 indicated the presence of a variety of organic and inorganic contaminants at the facility. Elevated levels of

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<sup>1</sup>A complete listing of maps and photography used in this report is provided in the References section.

arsenic, cadmium, vanadium, and zinc were found in the south yard and basin, and significant levels of copper and lead were found at the mouth of Williamson Creek.<sup>1</sup>

Potential sources of contamination found during this analysis include numerous light- and dark-toned stains throughout the site; several possible and probable outfalls along Williamson Creek; piles of rusty pipes, horizontal tanks, and drums in open storage; an uncontained blue material alongside rail lines in the north yard; piled waste material; refuse; and possible sandblast waste grit. Other findings include individual vertical and horizontal tanks, and evidence of filling in the south yard and west storage area.

A wetlands and drainage analysis was performed for the 1989 photography for an area encompassing a 1-kilometer (0.6-mile) radius of the site.

The EPA's Environmental Photographic Interpretation Center in Warrenton, Virginia, a branch of the Advanced Monitoring Systems Division of the Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, performed this analysis at the request of the Superfund Support Section of EPA Region 4 in Atlanta, Georgia, and the Office of Emergency and Remedial Response in Washington, D.C. This analysis covers the period from 1953 to 1990, and the report was completed in June 1991.

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<sup>1</sup>Hereinafter, collateral information supplied by EPA Region 4 will be identified with an asterisk (\*).

## METHODOLOGY

A search of government and commercial sources was undertaken to obtain the best available aerial photography of the site spanning the desired time frame. The photography and other sources of information used in this report are listed in the References section.

The analysis was performed by viewing backlit transparencies of aerial photography through stereoscopes. Stereoscopic viewing creates a perceived three-dimensional effect which, when combined with viewing at various magnifications, enables the analyst to identify signatures associated with different features and environmental conditions. The term "signature" refers to a combination of visible characteristics (such as color, tone, shadow, texture, size, shape, pattern, and association) which permit a specific object or condition to be recognized on aerial photography.

Photographic prints were made from those years of aerial photographic coverage that reveal significant information about the site. The analyst's findings are annotated on overlays to prints and/or base maps and described in the accompanying text. Site boundaries or areas used in this analysis were determined from the aerial photography in conjunction with collateral data supplied by EPA Region 4 and do not necessarily denote legal property lines or ownership.

Due to factors inherent in the photographic printing process, prints do not exhibit the level of detail that is visible in the original aerial photography. Therefore, some features identified from the aerial photography may not be clearly discernible, or even visible, on the photographic prints presented in this report.

Color infrared film has been reproduced for the 1989 photography (Figure 2). Normal color film records reflected energy in the blue, green and red portions of the electromagnetic spectrum. Color infrared film differs in that it is sensitive not only to reflected blue, green and red energy, but also to

reflected energy in the infrared portions of the electromagnetic spectrum; however, the blue energy is filtered out and only the green, red, and infrared energy is recorded. When color infrared film is processed, it displays "false" colors that do not correspond with the true colors of the features photographed. For example, features that are highly reflective in the infrared portion of the spectrum, such as healthy green vegetation, appear red to magenta on color infrared film. The false color displayed by a feature is produced in accordance with the proportions of infrared, green, and red energy it reflects. These proportions are referred to as the feature's "spectral reflectance characteristics." To interpret the true color of a particular feature accurately from color infrared film, a knowledge of the spectral reflectance characteristics of that feature is required. This information is not readily available for the majority of features identified in this report. Therefore, unless otherwise indicated, no attempt is made to interpret the true colors of features identified on the color infrared film analyzed for this report.

The terms "possible" and "probable" are used to indicate the degree of certainty of signature identification. "Possible" is used when only a few characteristics are discernible or these characteristics are not unique to a signature. "Probable" is used when incrementally more characteristics are discernible. No qualifying terms are used when the characteristics of a signature allow for a definite feature identification.

## WETLANDS AND DRAINAGE ANALYSIS

MARCH 11, 1989 (FIGURE 2)

Wetlands (W), open water (OW), and uplands (U) are delineated on an overlay to the 1989 photography. The analysis covers a 1-kilometer (0.6-mile) radius around the Latex Construction site. The dominant type of wetlands found to the west and south of the site is estuarine marsh.

The general direction of drainage flow offsite is to the south into the Williamson Creek and to the east into the south-flowing Wilmington River. The Williamson Creek and the Wilmington River are both tidally influenced.

## AERIAL PHOTO SITE ANALYSIS

NOVEMBER 23, 1953 (FIGURE 3)

Figure 3 represents the first available year of photography for the Latex Construction site. The site is composed of three major areas: the north yard, the west storage area, and the south yard, where most of the activities involving hazardous materials occurred.\* The north yard and south yard are separated by the basin.

Throughout this analysis, buildings (B) will be annotated and numbered only if staining or significant change is observed at that building during the course of the analysis.

### North Yard

A fence restricts vehicular access to the north yard from River Road. Several buildings (including B1) are seen, and scarred ground (not annotated) is evident throughout the yard. No staining is noted. Two rail lines lead from the basin into the yard. A boat (not annotated) is visible on the rail line, indicating the possible use of the north yard for ship repair or construction.

### West Storage Area

Activity in this portion of the site does not appear to be related to ship building or repair. The area consists of two houses and several small structures (none annotated) in the north portion.

### South Yard

The south yard is not yet developed but contains two large areas of mounded material (MM). No vehicular access into the south yard is visible.

### Drainage

Surface runoff from the site flows into Williamson Creek, the Wilmington River, and the basin. Williamson Creek flows east to the Wilmington River, which flows south. Small streams penetrate the marshland along Williamson Creek and the basin. Because the marshland is estuarine, the direction of these small streams changes with tidal currents. Channelized drainage is seen in the west portion of the site and farther west offsite.

DECEMBER 28, 1971 (FIGURE 4)

North Yard

Fencing continues to restrict access to the north yard, and additional fencing has been added on the west side of the yard. Additional buildings (including B2 and B3) have been constructed, and a stain (ST) is seen on the south side of B2. Stains throughout the site are dark-toned unless otherwise indicated. No stains are apparent around B3 at this time.

Boats (not annotated) are again seen on the rail line extending from the basin. Rail lines throughout the site will be annotated but not discussed further unless change is apparent. Sylvan Island Road\* has been constructed and runs south from River Road.

West Storage Area

This area has apparently been filled since 1953, when channelized drainage was seen. The majority of the area is now in use as a trailer park. Access into the trailer park is unrestricted from River Road. Two piles of dark-toned (DK) material (M) are noted within the southern half of the area, which is otherwise empty. A fence, with access into the southern half, is seen along Sylvan Island Road, beginning at Williamson Creek and continuing north for at least the extent of the southern half.

South Yard

Fill material covers much of the south yard. In the early 1960's the basin was dredged and sea walls were built. Reportedly, the spoils from the basin were deposited in the south yard.\*

Access into the south yard is unrestricted. A side road that runs parallel to Sylvan Island Road connects the north yard with the south yard. An excavation (EX1) is seen in the northwest portion near the entrance to the yard, adjacent to four piles of light-toned (LT) material. Several rail lines now appear in the south yard; boats (not annotated) are seen on them.

A considerable amount of ground disturbance (not annotated) is evident in the northeast portion of the yard; it is most likely related to filling within the yard. Three light-toned, vertical, unidentifiable objects (UO) are present along the Wilmington River. Dark-toned linear objects (O) are evident farther south, adjacent to a second excavation (EX2). A triangular, light-toned unidentifiable object is seen southwest of EX2. A third excavation (EX3) is seen farther west. A probable horizontal tank (HT) is visible north of EX3, and a revetment is seen south of EX3. Wet soil (not annotated) appears contained north of the revetment. A possible stain is visible south of the revetment, and a ground scar (GS), leading towards Williamson Creek, is seen farther south.

Two buildings (B4 and B5) are in the middle of the south yard. A light-toned stain flows south from a container (not annotated) at the southwest corner of B4. B5, which has been identified as the paint shop,\* is under construction. A horizontal tank is north of B5.

A dark-toned mound of material, a mound of light-toned material, and a group of probable pipes are visible in the south portion of the south yard.

A probable outfall (OF1) is seen along the western edge of the south yard along Williamson Creek. A possible outfall (OF2) is directly south of OF1. Another probable outfall (OF3) is located south of B5.

FEBRUARY 23, 1974 (FIGURE 5)

Access to the north yard continues to be restricted by a fence along River Road. A fence now exists on the east and west sides of Sylvan Island Road between River Road and Williamson Creek. Access to the west storage area from River Road is not restricted. Fencing and access into the site will no longer be discussed unless significant change is observed.

#### North Yard

A light-toned stain east of B1 appears to be flowing south towards B2. The stain seen on the south side of B2 in 1971 remains.

Two horizontal tanks, surrounded by a revetment (not annotated), are seen in the northwest corner of the yard. Reportedly, underground lines deliver fuel from these tanks to the marina on the east side of the yard.\* The rail lines now appear to have been removed from the north yard.

#### West Storage Area

The majority of the area continues to be used as a trailer park. The south portion contains a berm made of light-toned material parallel to Williamson Creek. Refuse (R), composed of light- and dark-toned items, is west of the location where dark-toned material was piled in 1971. Light-toned mounded material is seen north of the refuse. The entrance into the south portion of this area is no longer present.

#### South Yard

EX1 and the four light-toned piles are no longer visible. A pool of liquid (LQ), with no obvious source, is seen in the northwest portion of the yard, and drains into Williamson Creek. A possible vertical tank (VT) is seen east of the rail lines.

A group of possible horizontal tanks and two piles of probable pipes are visible in the northeast section of the yard, which is now used for open storage (OS). Features seen here in 1971 are no longer visible, with the exception of the ground scar northeast of B5. The ground scar now appears to lead to

channelized drainage, which runs south towards Williamson Creek. A possible outfall (OF5) is also seen at this location.

A small addition (not annotated) has been built onto the south side of B4, where two probable stains are noted. The light-toned stain seen in 1971 no longer exists. The horizontal tank north of B5 remains.

Medium-toned (MT) material is visible in the south portion of the yard. Dark-toned material is seen south of the medium-toned material. To the east, a pile of probable pipes, first seen in 1971, is again visible and a second group is seen farther north. Light-toned mounded material, visible in 1971, also remains. An access road is west of the medium-toned material. Along this road are a vertical tank and a possible vertical tank.

A probable outfall (OF4) is seen on the western edge of the yard. OF1 and OF2, seen in 1971, are no longer visible. OF3, south of B5, remains visible.

FEBRUARY 12, 1981 (FIGURE 6)

Photography from 1977 was analyzed but not reproduced for this report because of poor resolution. Any significant findings from that year of analysis will be discussed herein.

#### North Yard

A stain, seen in 1971, 1974, and 1977, remains south of B2. A light-toned stain, seen in 1974 adjacent to B1, is no longer visible. A probable stain is present east of the horizontal tanks and was also seen in 1977. A new building (B6) was constructed between 1974 and 1977 over top of where rail lines were seen prior to 1974. A possible stain is noted at the northern end of B6.

#### West Storage Area

The trailer park in the north portion of the area has decreased in size.

The south portion of this area now appears to be used for storage. Several objects (not annotated) have been placed along the west side of the area. While stacked pipes and groups of horizontal tanks are similarly placed on the 1990 photography, the poor resolution of the 1981 film prevents the identification of these as the same objects. The refuse and light-toned mounded material seen in 1974 are no longer visible. A possible fragment of the berm, seen in 1974, along with another berm farther south, are visible parallel to Williamson Creek.

#### South Yard

Liquid is no longer seen in the northwest portion of the south yard. However, a possible dark-toned stain is visible (and was also seen in 1977) west of the yard's rail lines. Open storage remains in the northeast portion of the yard. The small scale of the photography prevents the identification of features seen in past years. However, three vertical, light-toned, unidentifiable objects, similar to those seen in 1971 along the Wilmington River, were found south of the open storage area on the 1977 photography.

Additions (not annotated) to the north and east sides of B5 were noted between 1977 and 1981. The horizontal tank north of B5 was removed between 1977 and 1981.

An L-shaped, light-toned mound of material was seen in 1977 in the south portion of the yard. In 1981, a light-toned material is north of where the mound was seen. This material could be waste grit from sandblasting, which began in this portion of the south yard during the late 1970's.\* A vertical tank, visible east of the light-toned material, was also seen in 1977. The vertical tanks to the west, dark-toned mounded material, and possible pipes, visible in 1974, are no longer present. A new building (B7) has been added to the west side of the south yard. This building is part of the south yard's hazardous waste storage area, which was reportedly constructed in the south yard in 1978.\* Two areas of possible staining east of this building were also visible in 1977.

OF3 and OF4 remain visible. OF3 was seen in 1977 as well as 1981. OF5, visible in 1974 on the east side of the yard, is no longer present. A possible outfall (OF6) is jutting from the sea wall of the south yard into the basin. This is the only time a possible outfall within the basin is seen on the photography. Reportedly, drains onsite empty into both Williamson Creek and the basin.\*

SEPTEMBER 26, 1990 (FIGURE 7)

The 1989 photography was analyzed but not reproduced for this report due to the film's poor resolution. Any significant findings from 1989 will be discussed during this year of analysis.

#### North Yard

Fencing now surrounds the west side of the north yard, but access into the marina is unrestricted.

Two stains are noted on the east side of B1. A stain, formerly seen in 1971, 1974, and 1977, was again visible on the south side of B2 in 1989. Another stain is seen farther west on B2's south side. A stain is also adjacent to B3, in the marina.

A pile of light blue material lies along the rail line which leads from the basin to B6. This material is not seen elsewhere onsite. The two horizontal tanks surrounded by a retaining wall are still present, but no staining is visible in the vicinity.

#### West Storage Area

Fencing was installed between 1981 and 1989, restricting vehicular access into the west storage area, which is now in use by the Thunderbolt Marine, Inc. dredging company.\* The appearance of the area is much the same as was seen on the 1989 photography. Numerous stacked rusty pipes and three groups containing a total of 80 horizontal tanks (not annotated) occupy this portion of the site.

A stain leading to a dark liquid and three drums (D) are seen in the north portion of the storage area. A vertical tank is visible, partially covered by a small structure, and a single drum is noted south of the tank. An individual horizontal tank is adjacent to a pile of approximately 35 tires. To the west, a square fenced area contains several rectangular unidentifiable objects. Refuse and medium-toned material are seen within a three-sided bin (not annotated), south of a light-toned stain. An isolated stain is visible in the center of the storage area. Piled light-toned material is seen west of a group of horizontal tanks (not annotated) on the west side of the area. Light-toned

material is also seen in the south portion of the storage area, within a pile of discarded equipment (not annotated). A probable outfall (OF7) is also noted in this area, along Williamson Creek. An individual horizontal tank is visible on the east side of the storage area, adjacent to disturbed ground (DG).

#### South Yard

The south yard appeared quite active in the 1989 photography, with many items scattered about the site and several boats in dry dock. In 1990, however, the site appears inactive, with many areas of staining.

A horizontal tank and two areas of staining are seen in the northwest portion of the yard, along the basin.

Additional rail lines, first seen in 1989, have been added in the open storage area. Extensive staining is noted under these rail lines and south of the original rail lines. Three separate piles of grey waste material (WM) are visible along the northeastern edge of the yard.

Three areas of staining are seen east of B5, and an additional stain is at the southwest corner of B5. Rail lines now extend from the south side of B4, and staining is noted alongside these rails.

A fence was constructed between 1981 and 1989 around the hazardous waste storage area (not annotated), which now appears empty. Two areas of staining are visible: one within the fence to the south, the other east of the fence. Two large waste oil tanks were seen in this portion of the yard during a 1989 site inspection but are not visible on the 1990 photography. A number of drums were also observed in this area; however, no drums are seen in the south yard on the 1990 photography.

A stain, also seen in 1989, exists in the southeast portion of the yard at the end of the rail line where sandblasting was conducted. The stain spreads outward from the raised rail line, and continues towards Williamson Creek. A vertical tank stands within this area. A linear mound of material, composed of fine-textured, light-toned material, contains patches of vegetation

and is seen in two sections along the eastern border with Williamson Creek. Staining is seen on both sides of the mound to the south. Whether the mound has been placed to prevent the movement of sandblast grit or whether it is actually composed of sandblast grit cannot be determined. A probable vertical tank is noted in the southernmost portion of the yard.

A probable outfall (OF8) is located near the entrance to the south yard between the fences which run along Sylvan Island Road. Moving east along Williamson Creek, OF4, seen in 1974 and 1981, is again visible and may be a storm drain. OF2, also seen in 1971, is south of OF4. Two probable storm drains (SD) are seen farther south. Three probable outfalls (OF9, OF10, and OF11) are visible on the west side of B7. On the east side of the south yard, OF3, seen in 1971, 1974, and 1981, is no longer visible. A probable outfall (OF12) is visible farther north, east of B5. While all previous outfall pipes have been light-toned, OF12 is dark-toned and rusty.

# REFERENCES

## AERIAL PHOTOGRAPHY

<u>Date</u>	<u>Agency</u>	<u>Mission Code</u>	<u>Agency Frame #</u>	<u>Orig. Scale</u>	<u>EPIC Frame #</u>
November 23, 1953	NOS <sup>1</sup>	53	J:2996-2998	1:10,000	32525-32527
December 28, 1971	USGS <sup>2</sup>	VCVA	1:289-291	1:24,000	32405-32407
February 23, 1974	USGS	SWIJ	3:61-63	1:21,000	32402-32404
October 10, 1977	NOS	77E-2	3785,3786	1:40,000	32584,32585
February 12, 1981	ASCS <sup>3</sup>	13051	180:48-50	1:40,000	31823:203-205
March 11, 1989	USGS	NAPP	1371:37-39	1:40,000	32423-32425
September 26, 1990	EPA <sup>4</sup>	90/060	13-15; 2-4	1:3,000 1:20,000	90/060:13-15; 2-4

## MAPS

<u>Source</u>	<u>Name</u>	<u>Scale</u>	<u>Date</u>
USGS	Savannah, GA.-S.C.	1:24,000	1978
NWI <sup>5</sup>	Savannah, GA.-S.C.	1:24,000	Based on 1981 aerial photography

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U.S. Department of Agriculture, Soil Conservation Service. 1987. Hydric Soils of the United States.

Wilkes, R.L., J.H. Johnson, H.T. Stone, and D.D. Bacon. 1974. Soil Survey of Bryan and Chatham Counties, Georgia. U.S. Department of Agriculture, Soil Conservation Service.

<sup>1</sup>National Ocean Survey, U.S. Department of Commerce

<sup>2</sup>U.S. Geological Survey, U.S. Department of the Interior

<sup>3</sup>Agricultural Stabilization and Conservation Service, U.S. Department of Agriculture

<sup>4</sup>U.S. Environmental Protection Agency

<sup>5</sup>National Wetlands Inventory, U.S. Fish and Wildlife Service, U.S. Department of the Interior

United States  
Environmental Protection  
Agency

Environmental Monitoring  
Systems Laboratory  
P.O. Box 93478  
Las Vegas NV 89193-3478

TS-PIC-90939  
June 1991

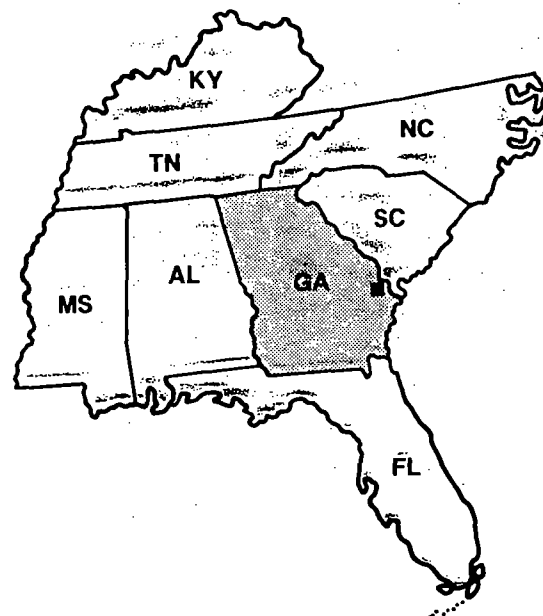
Research and Development



# Site Analysis Latex Construction Thunderbolt, Georgia

EPA Region 4  
and OERR

Volume 2



TS-PIC-90939  
June 1991

Site Analysis  
Latex Construction  
Thunderbolt, Georgia

Volume 2

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Contract No. 68-03-3532

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ENVIRONMENTAL MONITORING SYSTEMS LABORATORY  
OFFICE OF RESEARCH AND DEVELOPMENT  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
LAS VEGAS, NEVADA 89193-3478



FIGURE 1  
LATER CONSTRUCTION

LOCATION MAP  
OF THE DELAWARE RIVER

SCALE 1:24,000



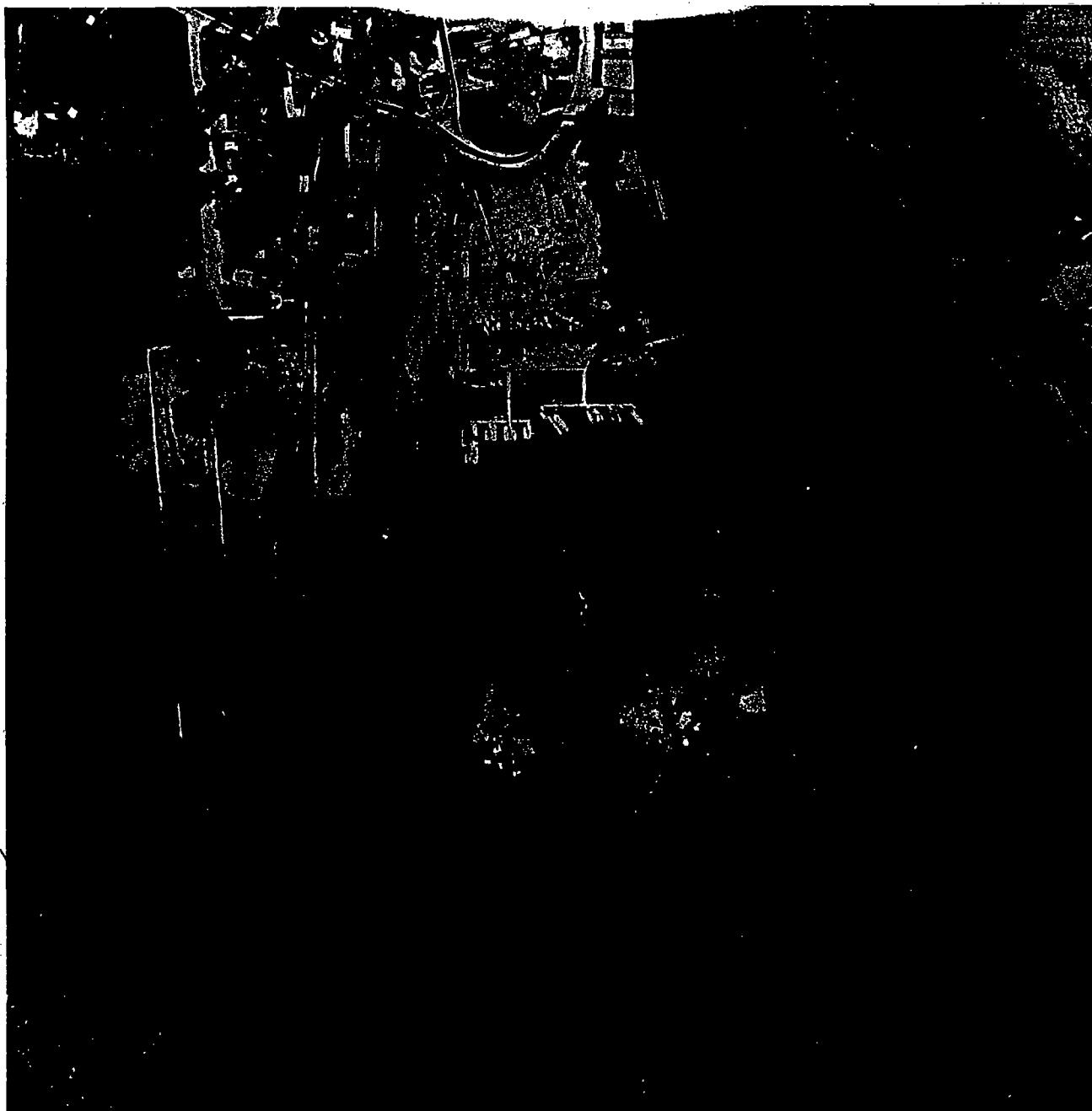
# LEGEND

- B - Building
- D - Drums
- DG - Disturbed Ground
- DK - Dark-Toned
- EX - Extraction/Excavation
- GS - Ground Scar
- HT - Horizontal Tank
- LQ - Liquid
- LT - Light-Toned
- M - Material
- MM - Mounded Material
- MT - Medium-Toned
- O - Object
- OF - Outfall
- OS - Open Storage
- OW - Open Water
- R - Refuse
- SD - Storm Drain
- ST - Stain
- U - Upland
- UO - Unidentifiable Object
- VT - Vertical Tank
- W - Wetlands
- WM - Waste Material
- Access Road
- ===== Berm
- ====> Channelized Drainage
- Drainage (Tidal)
- ||||| Edge of Slope
- Feature Boundary
- Fence
- Rail Line
- Revetment
- Site Boundary

FIGURE 2  
LATEX CONSTRUCTION

WETLANDS & DRAINAGE ANALYSIS  
MARCH 11, 1989

APPROX. SCALE 1:11,700



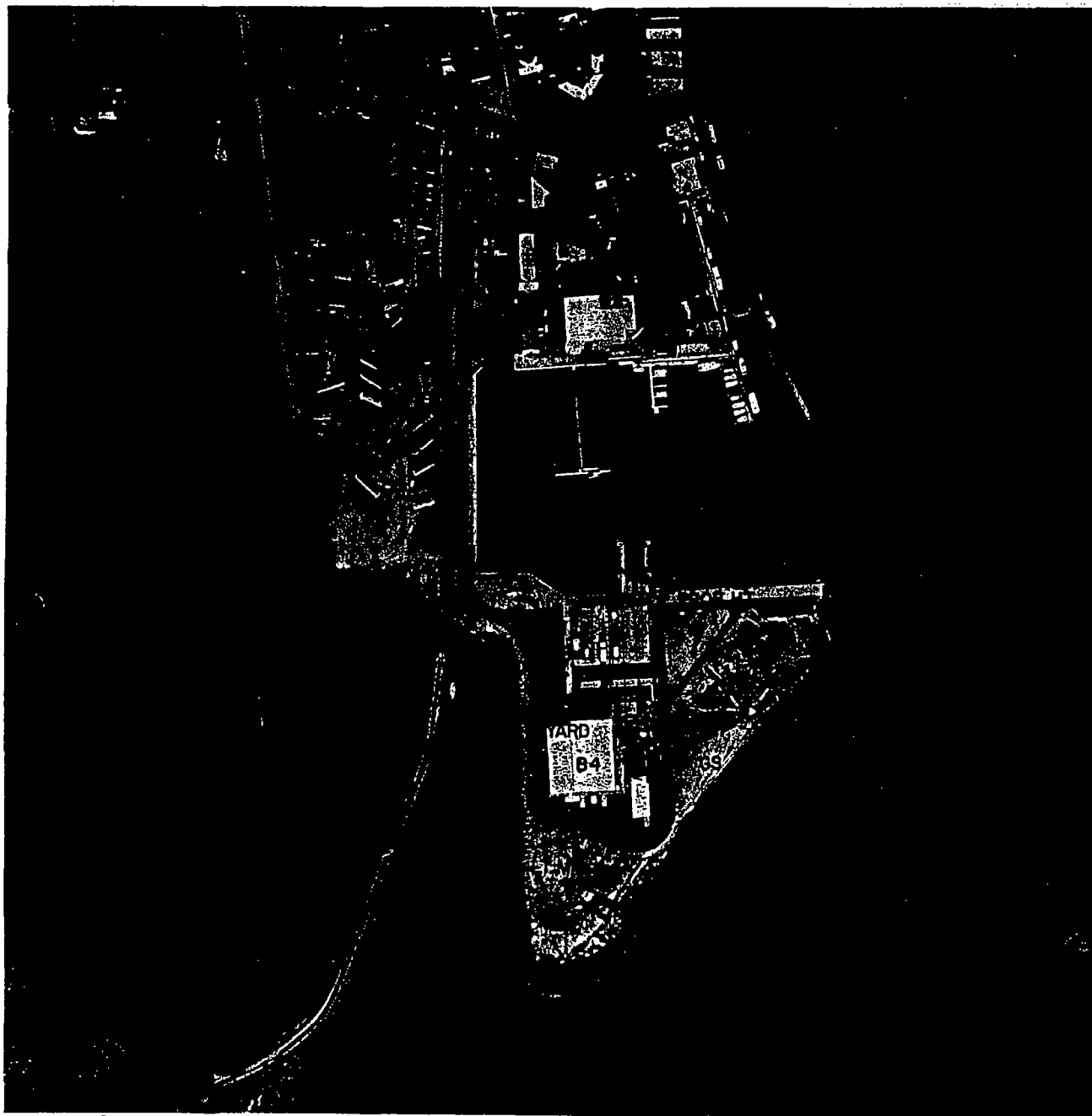
# LEGEND

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- HT - Horizontal Tank
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- OS - Open Storage
- OW - Open Water
- R - Refuse
- SD - Storm Drain
- ST - Stain
- U - Upland
- UO - Unidentifiable Object
- VT - Vertical Tank
- W - Wetlands
- WM - Waste Material
- Access Road
- Barn
- Channelized Drainage
- Drainage (Tidal)
- Edge of Slope
- Feature Boundary
- Fence
- Rail Line
- Revetment
- Site Boundary

FIGURE 3.  
LATEX CONSTRUCTION

NOVEMBER 23, 1953

APPROX. SCALE 1:3,300



# LEGEND

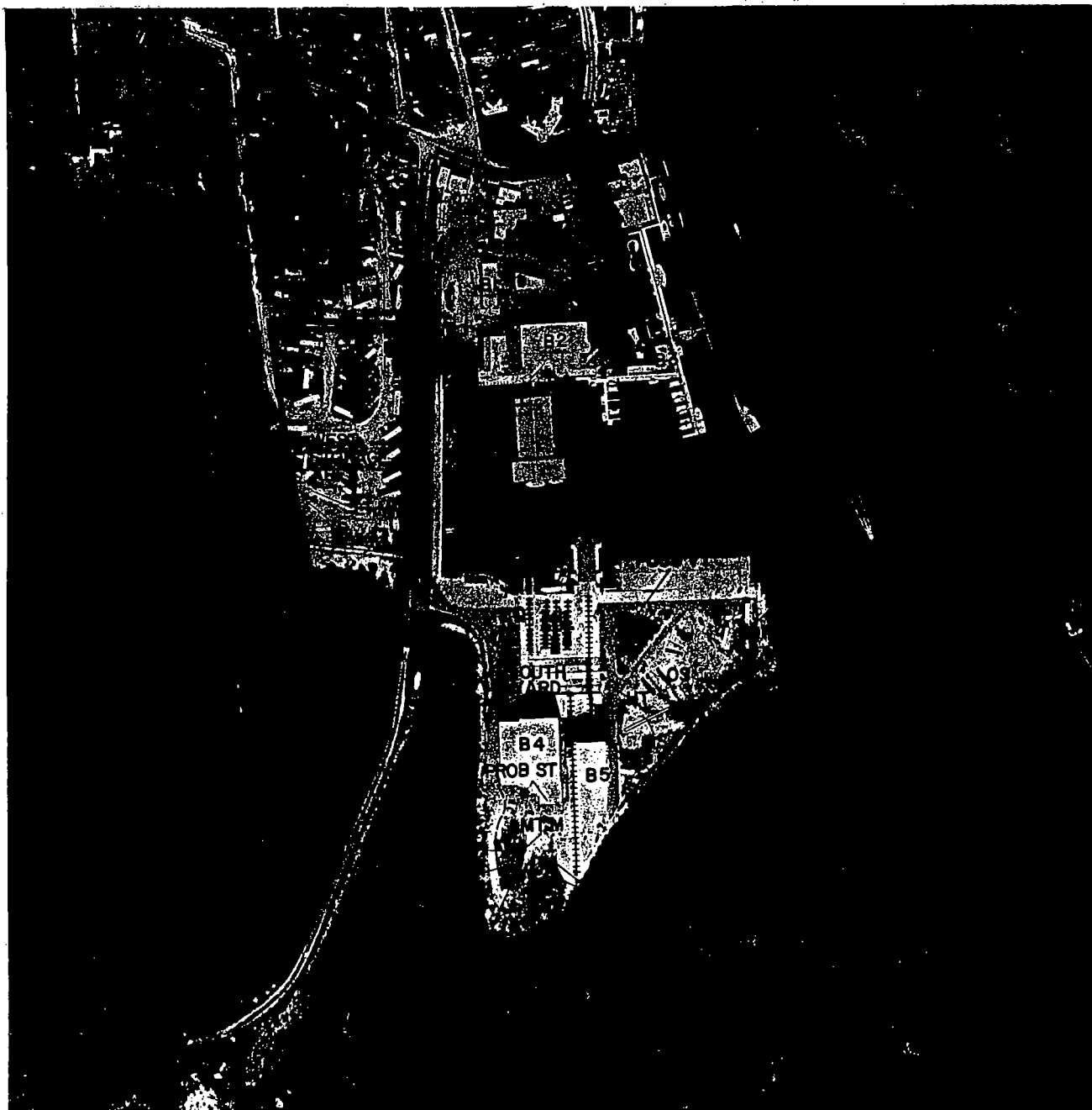
- B - Building
- D - Drums
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- DK - Dark-Toned
- EX - Extraction/Excavation
- GS - Ground Scar
- HT - Horizontal Tank
- LQ - Liquid
- LT - Light-Toned
- M - Material
- MM - Mounded Material
- MT - Medium-Toned
- O - Object
- OF - Outfall
- OS - Open Storage
- OW - Open Water
- R - Refuse
- SD - Storm Drain
- ST - Stain
- U - Upland
- UO - Unidentifiable Object
- VT - Vertical Tank
- W - Wetlands
- WM - Waste Material

- Access Road
- Berm
- Channelized Drainage
- Drainage (Tidal)
- Edge of Slope
- Feature Boundary
- Fence
- Rail Line
- Revetment
- Site Boundary

FIGURE 4  
LATEX CONSTRUCTION

DECEMBER 28, 1971

APPROX. SCALE 1:3,200



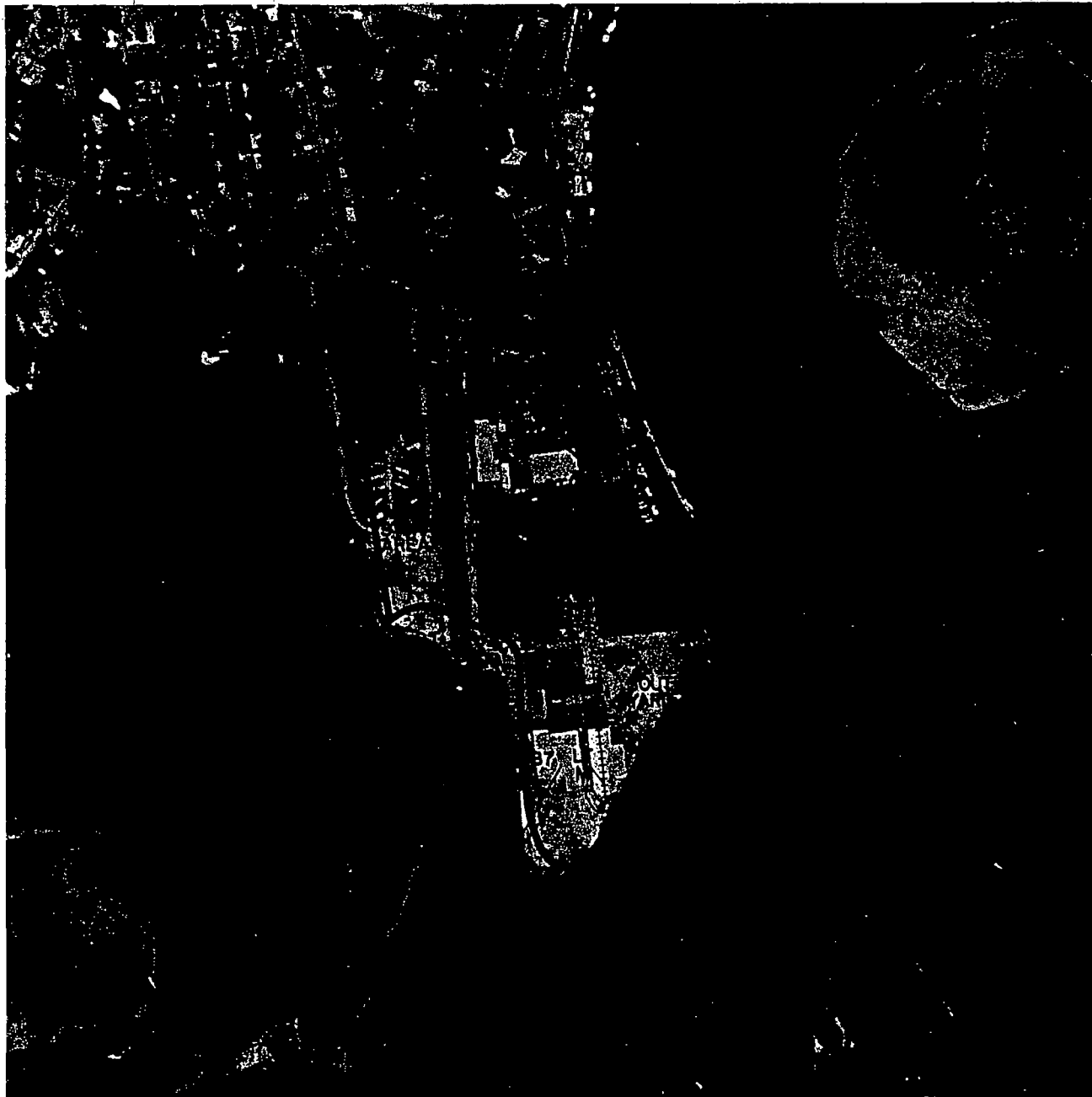
LEGEND

B	- Building
D	- Drums
DG	- Disturbed Ground
DK	- Dark-Toned
EX	- Extraction/Excavation
GS	- Ground Scar
HT	- Horizontal Tank
LQ	- Liquid
LT	- Light-Toned
M	- Material
MM	- Mounded Material
MT	- Medium-Toned
O	- Object
OF	- Outfall
OS	- Open Storage
OW	- Open Water
R	- Refuse
SD	- Storm Drain
ST	- Stain
U	- Upland
UO	- Unidentifiable Object
VT	- Vertical Tank
W	- Wetlands
WM	- Waste Material
---	- Access Road
---	- Berm
---	- Channelized Drainage
---	- Drainage (Tidal)
---	- Edge of Slope
---	- Feature Boundary
---	- Fence
---	- Rail Line
---	- Revetment
---	- Site Boundary

FIGURE 5  
LATEX CONSTRUCTION

FEBRUARY 23, 1974

APPROX. SCALE 1:3,200

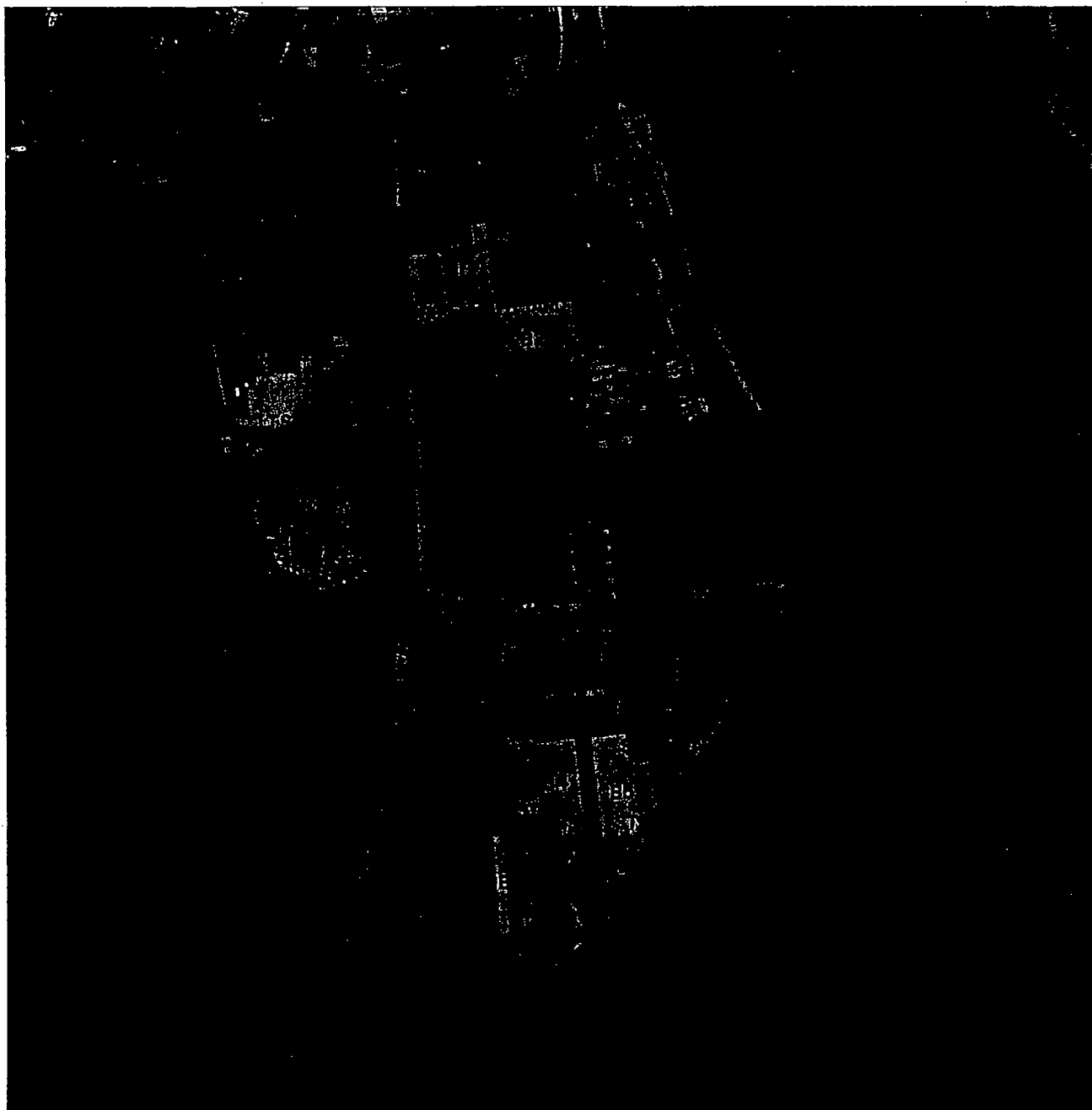


LATEX CONSTRUCTION

FEBRUARY 12, 1961

# LEGEND

- B - Building
- D - Drums
- DG - Disturbed Ground
- DK - Dark-Toned
- EX - Extraction/Excavation
- GS - Ground Scar
- HT - Horizontal Tank
- LQ - Liquid
- LT - Light-Toned
- M - Material
- MM - Mounded Material
- MT - Medium-Toned
- O - Object
- OF - Outfall
- OS - Open Storage
- OW - Open Water
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# LEGEND

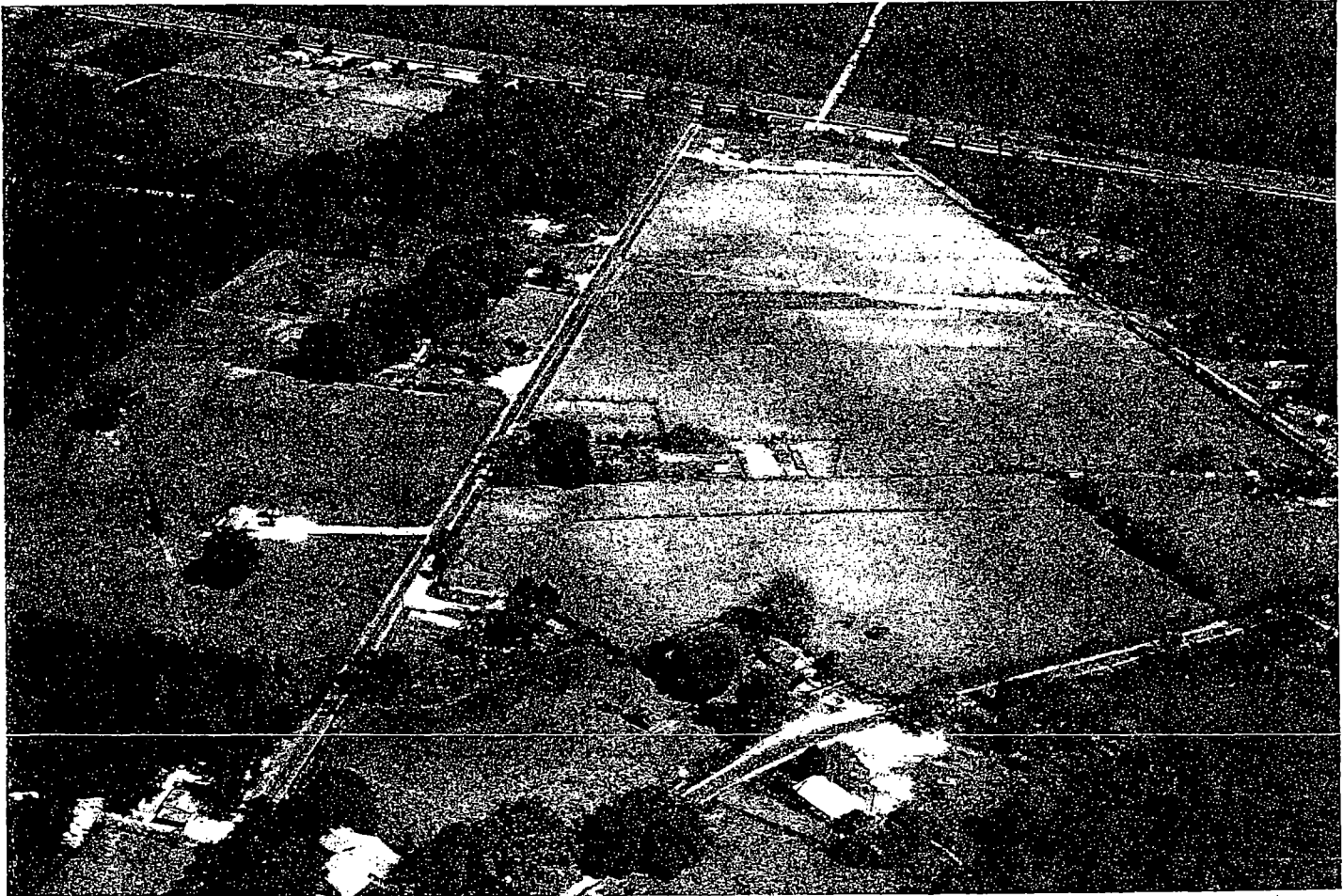
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- OP - Outfall
- OS - Open Storage
- OW - Open Water
- R - Refuse
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- Access Road
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- Channelized Drainage
- Drainage (Tidal)
- Edge of Slope
- Feature Boundary
- Fence
- Rail Line
- Revetment
- Site Boundary

FIGURE 7  
LATEX CONSTRUCTION

SEPTEMBER 26, 1990

APPROX. SCALE 1:2,900

SOIL SURVEY OF  
**Bryan and Chatham  
Counties, Georgia**



**United States Department of Agriculture  
Soil Conservation Service**

**In cooperation with**

**University of Georgia, College of Agriculture  
Agricultural Experiment Stations**

**Issued March 1974**

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# SOIL SURVEY OF BRYAN AND CHATHAM COUNTIES, GEORGIA

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BRYAN AND CHATHAM COUNTIES are in the eastern corner of Georgia (fig. 1), within the Atlantic Coastal Flatwoods section of the State. The counties adjoin and have a total land area of 880 square miles or 563,200 acres. Bryan County has a land area of 439 square miles, 280,960 acres, and Chatham County has a land area of 441 square miles, or 282,240 acres. The Savannah River forms the northeastern boundary of Chatham County, the Atlantic Ocean forms the eastern boundary. Bryan and Chatham Counties are separated by the Ogeechee River. Savannah is the population center for the eastern part of the State and is an important seaport for the Southeast.

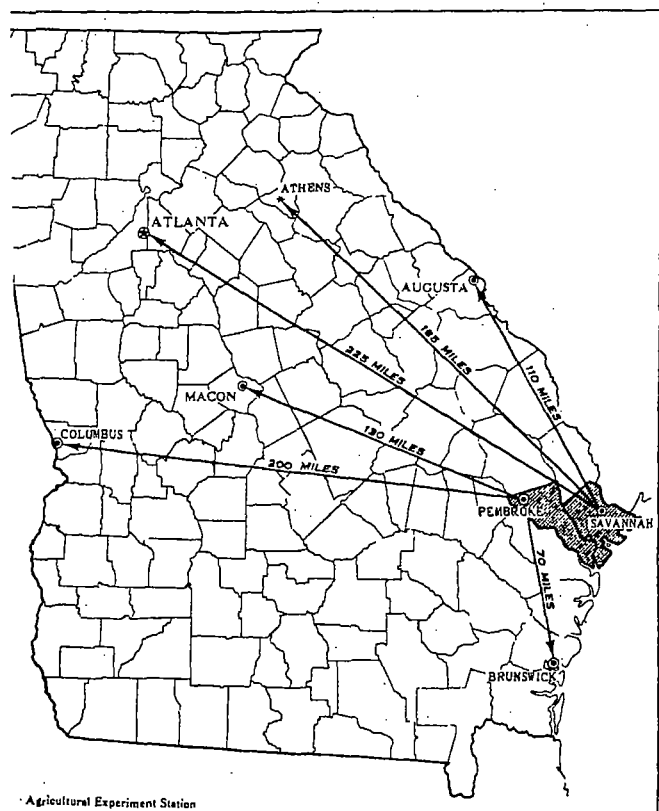


Fig. 1. Location of Bryan and Chatham Counties in Georgia.

A group of English under General James Oglethorpe settled in Savannah in 1733. Migration moved westward after the coastal area was settled. According to the U.S. Bureau of Census, in 1960 the population of Chatham County was 188,299 and Bryan County was 6,226. Savannah, Chatham County seat, had a population of 149,245. The county seat of Bryan County is Pembroke and its 1960 population was 1,450. The population in cities and towns is increasing, but the farm population is decreasing. In 1959, the average size of farms in Bryan County was about 204 acres and in Chatham County it was about 258 acres. In 1964 the average size of farms was about 233 acres in Bryan County and 207 acres in Chatham County. In that year about 12.5 percent of Bryan County was in farms and about 17 percent of Chatham County.

The major soils chiefly have a sandy surface layer over a loamy or sandy subsoil or underlying layers. These soils are mainly nearly level or gently sloping and occur as broad, smooth areas drained by wet depressions. They generally are seasonally wet or almost always wet, except for the better drained soils on the slight ridges and dunelike relief. A band of marshland parallels the coastline and extends inland along the major streams. Marshland makes up about 22 percent of the total acreage of these two counties.

About 65 percent of the survey area is in woodland and is held in large tracts by pulp and paper companies and the Fort Stewart Military Reservation. The warm humid climate and high water table promote rapid tree growth. The wood products harvested from the forest and the many industries around Savannah are the chief sources of income.

Local markets are available for all locally and regionally produced crops.

## How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in Bryan and Chatham Counties, where they are located, and how they can be used. The soil scientists went into the counties knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native

Because the soils of this association are wet, they are poorly suited to farming. Woodland is a good use.

The association has severe limitations for nonfarm uses, such as residential sites, industrial sites, and roads.

### **Areas Dominated by Wet Soils That Have Loamy to Clayey Underlying Layers and Are Frequently Flooded**

Three associations in Bryan and Chatham Counties occur on bottom lands, in marshes, or in depressional drainageways. They consist of nearly level soils and are at sea level to a few feet above. These associations occur along the eastern seaboard, along the Canoochee, Ogeechee, and Savannah Rivers, and in the drainageways of major creeks. The soils are chiefly gray, have a loamy surface layer, and have loamy to clayey underlying layers.

#### **11. Ellabelle-Cape Fear association**

*Very poorly drained soils that have loamy and clayey underlying layers; on creek flood plains and in drainageways that are frequently flooded*

This association occurs on flood plains of the minor streams in the western half of Chatham County and the central and southern parts of Bryan County. Slopes are generally less than 2 percent, and runoff from higher soils passes over the soils of this association before reaching major streams. Elevation ranges from 6 to 20 feet above sea level.

This association makes up about 12 percent of Bryan and Chatham Counties. About 45 percent of this is Ellabelle soils, and 40 percent is Cape Fear soils. Minor soils make up the remaining 15 percent.

The major soils are very poorly drained and occur on similar parts of the landscape. Ellabelle soils have a surface layer of black loamy sand about 11 inches thick. Below the surface layer is light brownish-gray loamy sand about 11 inches thick. It is underlain by gray sandy clay loam that extends to a depth of about 60 inches. This layer is mottled with yellowish brown and strong brown in the upper part and yellowish brown in the lower part.

Cape Fear soils have a very dark gray clay loam surface layer about 10 inches thick. Below the surface layer, to a depth of 72 inches, is mainly dark-gray clay mottled with shades of brown and gray.

Minor soils are mainly the somewhat poorly drained Ogeechee soils.

All of the acreage in this association is wooded chiefly with hardwoods, such as water oak, willow oak, cypress, blackgum, and sweetgum. A few scattered loblolly pines grow in some places. The frequent flooding, wetness, and clayey underlying layer make it difficult to use conventional equipment for harvesting wood crops.

Because the soils in this association are wet and frequently flooded, they are not suited to farming. Limitations for residential sites, roads, parks, and similar nonfarm uses are severe.

#### **12. Tidal marsh-Capers association**

*Very poorly drained tidal marshes and soils that have a clayey underlying layer; along the eastern seaboard*

This association consists mostly of the marshes in the eastern part of Bryan and Chatham Counties. These marshes are separated from the ocean by barrier islands but form a continuous belt extending from north to south. They are dissected by sounds and tidal streams. To the west, marshes extend up the larger streams and estuaries. The elevation ranges from sea level to about 6 feet; therefore, high tides cover most areas twice daily. Slopes generally are less than 2 percent.

This association makes up about 21 percent of the survey area. About 80 percent of this is Tidal marsh, salty, and about 10 percent is Capers soils. Minor soils make up the remaining 10 percent.

Tidal marsh, salty, is typically high in clay content, but it has some discontinuous masses of sand that vary in size and thickness. The surface layer is high in organic-matter content and in places does not support light loads. The underlying layers are mainly greenish-gray clay.

Capers soils are similar to Tidal marsh, salty, but they occur at slightly higher elevations and are flooded less frequently. The surface layer, high in organic-matter content, is very dark gray clay loam about 8 inches thick. The underlying layer, to a depth of 60 inches, is mainly greenish-gray clay.

The minor part of this association is Tidal marsh, fresh. It is similar to other marshes but is flooded by fresh water rather than by salt water.

A small acreage of the Capers soils and Tidal marsh, fresh, adjacent to the Ogeechee River is being developed for cultivation. Tidal marsh, fresh, along the Savannah River is used as a wildlife refuge. The rest of the association is in its natural state. It has a grass type vegetation that is divided into three main groups. In the lower areas, Tidal marsh, salty, has a cover of smooth cordgrass. Areas of Capers soils that generally are not flooded by normal high tides have a cover that is chiefly black rush or giant cutgrass. Tidal marsh, fresh, is covered chiefly with giant cutgrass and cattails.

The fertility of these soils and land types is very high, but the frequent flooding and unstable conditions limit use for farming, woodland, and nonfarm purposes. Also, the sulfides in Tidal marsh, salty, and in Capers soils, when exposed to air, oxidize to produce acids in quantities that severely restrict or prevent plant growth. This condition presents severe problems in stabilizing dikes with vegetation. The aquatic wildlife of this association is an important source of recreation and income in the area.

#### **13. Angelina-Bibb-Fresh water swamp association**

*Very poorly drained and poorly drained soils that are loamy throughout; on stream flood plains*

This association occurs on the flood plains along major streams and is subject to frequent flooding for long periods in winter and spring. The most eastern parts of the association are affected by tides. Slopes generally are less than 2 percent. The association occurs along the Ogeechee, Canoochee, and Savannah Rivers and, in Bryan County, along Black and Mill Creeks.

This association makes up about 4 percent of the survey area. About 30 percent of this is Angelina soils, 15 percent is Bibb soils, and 15 percent is Fresh water swamp. Minor soils make up the remaining 40 percent.

TABLE 1.—*Approximate acreage and proportionate extent of the soils*

Soil	Bryan County	Chatham County	Total	
	Acres	Acres	Percent	Acres
Albany fine sand.....	11, 520	4, 430	2. 8	15, 950
Angelina and Bibb soils, frequently flooded.....	14, 760	2, 760	3. 1	17, 520
Cape Fear soils.....	7, 430	35, 125	7. 6	42, 555
Capers soils.....	1, 600	11, 850	2. 4	13, 450
Chipley fine sand.....	9, 910	8, 450	3. 3	18, 360
Chipley-Urban land complex.....	0	6, 270	1. 1	6, 270
Coastal beach.....	0	1, 035	. 2	1, 035
Craven loamy fine sand.....	1, 520	1, 925	. 6	3, 445
Dothan loamy sand.....	1, 085	0	. 2	1, 085
Ellabelle loamy sand.....	59, 125	18, 150	13. 7	77, 275
Fresh water swamp.....	3, 685	0	. 7	3, 685
Fuquay loamy sand.....	4, 955	0	. 9	4, 955
Johnston loam.....	2, 020	125	. 4	2, 145
Kershaw coarse sand, 2 to 8 percent slopes.....	5, 435	935	1. 1	6, 370
Kershaw-Osier complex.....	0	4, 900	. 9	4, 900
Lakeland sand.....	12, 570	6, 680	3. 4	19, 250
Leon fine sand.....	6, 110	4, 090	1. 8	10, 200
Lucy loamy sand, 5 to 12 percent slopes.....	915	0	. 2	915
Lynn Haven sand.....	1, 275	430	. 3	1, 705
Made land.....	0	4, 945	. 9	4, 945
Mascotte sand.....	14, 325	4, 960	3. 4	19, 285
Meggett loam.....	375	505	. 2	880
Ocilla complex.....	13, 605	16, 985	5. 4	30, 590
Ocilla-Urban land com- plex.....	0	5, 875	1. 0	5, 875
Ogeechee loamy fine sand.....	17, 030	14, 800	5. 7	31, 830
Ogeechee-Urban land complex.....	0	6, 975	1. 2	6, 975
Olustee fine sand.....	13, 565	3, 305	3. 0	16, 870
Osier fine sand.....	0	1, 290	. 2	1, 290
Pelham loamy sand.....	19, 195	9, 105	5. 0	28, 300
Pooler fine sandy loam.....	3, 280	4, 835	1. 4	8, 115
Stilson loamy sand.....	27, 365	0	4. 9	27, 365
Tidal marsh, fresh.....	2, 020	12, 180	2. 5	14, 200
Tidal marsh, salty.....	19, 805	80, 115	17. 7	99, 920
Wahee sandy loam.....	6, 480	3, 080	1. 7	9, 560
Wahee-Urban land com- plex.....	0	975	. 2	975
City of Savannah.....	0	5, 155	. 9	5, 155
Total.....	280, 960	282, 240	100. 0	563, 200

end of this survey, and more detailed information about the terminology and methods of soil mapping can be obtained from the Soil Survey Manual (9).<sup>1</sup>

### Albany Series

The Albany series consists of slightly undulating, somewhat poorly drained soils. These soils are mainly nearly level, but slopes range to about 5 percent.

In a representative profile, the surface layer is very dark gray fine sand about 7 inches thick. The subsurface layer is mainly fine sand and extends to a depth of 42 inches. It is light olive brown in the upper part and

<sup>1</sup> Italic numbers in parenthesis refer to Literature Cited, p. 69.

Angelina soils are very poorly drained. They have a very dark gray loam surface layer about 3 inches thick. The underlying layer ranges from sand to silty clay loam. It is mottled light-gray sand in the upper 11 inches, dark-gray silty clay loam in the next 14 inches, and black loam in the lower 22 inches.

Bibb soils are poorly drained and are frequently flooded. The surface layer is light brownish-gray loamy sand about 18 inches thick. It is underlain by stratified sandy loam, coarse sand, and sand. The stratified layer is mottled light brownish gray in the upper part and light olive gray in the lower part.

Fresh water swamp is a wet, forested, micaceous landscape. It consists mainly of mixed mineral sediments and organic matter. Some areas are soft and difficult to travel over. High tides twice daily force streams to reverse their flow and force fresh water over much of the landscape. In places old stream meanders are evident.

Minor soils are chiefly the very poorly drained Johnston and Cape Fear soils.

All of the acreage is wooded. The vegetation is water-tolerant hardwoods, chiefly blackgum, cypress, tupelo, hickory, and water oak. The seasonal high water table and frequent flooding are severe limitations for nonfarm uses.

### Descriptions of the Soils

This section describes the soil series and mapping units in Bryan and Chatham Counties. Each soil series is described in considerable detail, and then, briefly, each mapping unit in that series. Unless it is specifically mentioned otherwise, it is to be assumed that what is stated about the soil series holds true for the mapping units in that series. Thus, to get full information about any one mapping unit, it is necessary to read both the description of the mapping unit and the description of the soil series to which it belongs.

An important part of the description of each soil series is the soil profile, that is, the sequence of layers from the surface downward to rock or other underlying material. Each series contains two descriptions of this profile. The first is brief and in terms familiar to the layman. The second, detailed and in technical terms, is for scientists, engineers, and others who need to make thorough and precise studies of soils. Unless it is otherwise stated, the colors given in the descriptions are those of a moist soil. As mentioned in the section "How This Survey Was Made," not all mapping units are members of a soil series. Made land, for example, does not belong to a soil series, but nevertheless is listed in alphabetic order along with the soil series.

Following the name of each mapping unit is a symbol in parentheses. This symbol identifies the mapping unit on the detailed soil map. Listed at the end of each description of a mapping unit is the capability unit and woodland group in which the mapping unit has been placed.

The acreage and proportionate extent of each mapping unit are shown in table 1. Many of the terms used in describing soils can be found in the Glossary at the

managed, this soil is well suited to corn, tobacco, soybeans, and rye. Plants suitable for pasture and hay are Coastal bermudagrass, bahiagrass, oats, rye, crimson clover, and millet.

Row crops can be grown year after year if this soil is adequately drained, fertilized, and limed, and plant residue is returned to the soil. Drainage practices that are practical include installing open ditches, bedding, and the drainage. Tile drainage is especially beneficial where tobacco is grown.

This soil is also suited to pine trees. Capability unit IIw-2; woodland group 3s2.

### Tidal Marsh, Fresh

Tidal marsh, fresh (Tmh) is adjacent to the major fresh water streams. It occurs in the upper reaches of the marshland belt and is influenced by the daily tides. Except during storm tides, it also is influenced by the adjacent fresh water. Tidal marsh, fresh, is level or nearly level and from 3 to 5 feet above sea level.

This land type consists of sediments washed down by streams flowing out of the Coastal Plain and Piedmont Major Land Resource Areas. The soil material varies from place to place. The surface layer is black or dark grayish-brown silty clay loam that contains many roots. Underneath the surface layer is grayish-brown to black, oft, clayey material that has decaying logs, roots, and tumps intermixed. In some areas there are thin lenses of sand, and in other areas sandy material occurs at a depth of 3 to 8 feet.

Most of the acreage was used for growing rice before the turn of the century but is now idle. A small part is used for truck crops. If this marsh is kept dry for a long time, the surface subsides rapidly. The tilth of the surface layer is poor, and use of heavy machinery is difficult during wet periods.

The vegetation is chiefly giant cutgrass, maidencane, rushes, and cattails. Tidal marsh, fresh, is an excellent habitat for waterfowl and is used extensively by migratory wildlife. Capability unit VIIw-2; not assigned to woodland group.

### Tidal Marsh, Salty

Tidal marsh, salty (Tml) is between the barrier islands and the mainland. These areas daily are partly covered by normal high tides. The vegetation is salt-tolerant grass. This marsh is dissected by many tidal streams that vary in size and extend inland along the estuaries (fig. 13). The small creeks and streams generally connect the rivers and ponds. Some shifting of stream channels and relocation of materials are caused by strong tidal currents.

The sediments of this land type are very dark gray to black and loamy. Away from the streams, the surface layer is building up very slowly. The surface layer contains many pithy, fibrous roots, and the high organic matter content gives it a bulk density of less than 1.0 in most areas. The material below the surface layer ranges from very dark gray to greenish gray and varies considerably in texture and consistence. Some areas are very stable and do not support the weight of large animals. The reaction is alkaline, and the salt content is high.

The sulfur content is more than 1 percent in most places, and a strong hydrogen sulfide odor is evident when the material is disturbed. Upon drying, the sulfur changes or oxidizes to sulfates, and an extremely low pH is the result.

Included with this land type in mapping are areas of Capers, Kershaw, and Osier soils.

None of this land is cultivated. The areas are marshes covered with smooth cordgrass. They are not managed but are important in furnishing food and spawning grounds for both wildlife and marine life. Capability unit VIIw-3; not assigned to a woodland group.

### Wahee Series

The Wahee series consists of somewhat poorly drained soils that have a highly mottled gray, red, and brown clayey layer below the surface layer. These soils occur on isolated, low ridges and have slopes of mostly less than 2 percent. They formed in sandy clay of the Coastal Plain marine terraces.

In a representative profile, the surface layer is very dark gray sandy loam about 5 inches thick. The subsurface layer is light yellowish-brown sandy loam about 6 inches thick. The subsoil extends to a depth of 60 inches. In sequence from the top, the upper 6 inches is brownish-yellow sandy clay loam mottled with shades of brown and gray, the next 21 inches is light brownish-gray clay mottled with red, and the lower 22 inches is gray clay and sandy clay loam mottled with shades of brown and red.

These soils are low in natural fertility and organic-matter content. They are very strongly acid throughout. The available water capacity is medium, and permeability is slow.

The present vegetation is chiefly mixed loblolly pine, red oak, and sweetgum. Areas that have not been cleared normally have an understory of wiregrass and waxmyrtle. Most of the acreage is wooded, but about 20 percent is in pasture or cultivated crops.

Representative profile of Wahee sandy loam, 4.8 miles south of Richmond Hill and 2.2 miles east of U.S. Highway No. 17, west bank of Sheep Island Road, 800 feet south of Belfast Siding Road, Bryan County:

- A1—0 to 5 inches, very dark gray (10YR 3/1) sandy loam; weak, fine, granular structure; very friable; many small roots; very strongly acid; clear, smooth boundary.
- A2—5 to 11 inches, light yellowish-brown (2.5Y 6/4) sandy loam; few, fine, faint, light brownish-gray (2.5Y 6/2) and light olive-brown (2.5Y 5/6) mottles; moderate, fine, granular structure; friable; few small roots; very strongly acid; clear, wavy boundary.
- B1t—11 to 17 inches, brownish-yellow (10YR 6/6) sandy clay loam; common, fine, faint, yellowish-brown (10YR 5/6) and light brownish-gray (10YR 6/2) mottles; weak, coarse, subangular blocky structure; firm; few small roots; very strongly acid; gradual, wavy boundary.
- B21tg—17 to 33 inches, light brownish-gray (10YR 6/2) clay; common, fine and medium, prominent, red (10R 4/6) mottles; strong, medium, angular blocky structure that breaks to very fine, angular blocky structure; extremely firm; few small roots on some ped surfaces; prominent clay films on most ped surfaces; very strongly acid; gradual, wavy boundary.

TABLE 8.—*Estimated acre yields of the principal crops and pasture plants grown under a high level of management*

[Yields are for nonirrigated soils. Absence of yield means that the crop is not suited to the soil or generally is not grown on it]

Soil	Corn	Cotton lint	To- bacco	Soy- beans	Pea- nuts	Small grain pasture	Coastal bermudagrass		Bahia- grass pasture
							Hay	Pasture	
	Bu.	Lb.	Lb.	Bu.	Lb.	A-U-M <sup>1</sup>	Tons	A-U-M <sup>1</sup>	A-U-M <sup>1</sup>
Albany fine sand.....	65	-----	2,000	25	1,500	3	4.5	7.5	6.5
Angelina and Bibb soils, frequently flooded.....	-----	-----	-----	-----	-----	-----	-----	-----	3.5
Cape Fear soils.....	-----	-----	-----	-----	-----	-----	-----	-----	4.5
Chipley fine sand.....	55	-----	2,000	20	-----	3	4.5	7.5	6.5
Craven loamy fine sand.....	75	-----	-----	35	-----	3	3.5	5.8	6.0
Dothan loamy sand.....	85	625	2,200	40	2,000	3	5.5	9.2	8.0
Ellabelle loamy sand.....	-----	-----	-----	-----	-----	-----	-----	-----	5.0
Fuquay loamy sand.....	80	500	2,300	30	2,900	3	4.5	7.5	6.5
Johnston loam.....	-----	-----	-----	-----	-----	-----	-----	-----	3.5
Lakeland sand.....	55	-----	1,400	20	-----	2	3.5	5.8	4.5
Leon fine sand.....	50	-----	-----	-----	-----	-----	-----	-----	4.5
Lucy loamy sand, 5 to 12 percent slopes.....	60	-----	-----	30	1,800	3	4.0	6.7	6.5
Lynn Haven sand.....	50	-----	-----	-----	-----	3	-----	-----	3.0
Mascotte sand.....	50	-----	-----	-----	-----	-----	-----	-----	4.5
Meggett loam.....	-----	-----	-----	-----	-----	-----	-----	-----	4.5
Ocilla complex.....	65	-----	-----	30	-----	3	4.5	7.5	7.0
Ogeechee loamy fine sand.....	65	-----	-----	-----	-----	3	-----	-----	5
Olustee fine sand.....	70	-----	2,200	25	-----	3	4.5	7.5	5
Osier fine sand.....	-----	-----	-----	-----	-----	-----	-----	-----	5
Pelham loamy sand.....	70	-----	-----	-----	-----	3	-----	4.0	5.5
Pooler fine sandy loam.....	-----	-----	-----	-----	-----	-----	4	6.7	5.5
Stilson loamy sand.....	80	-----	2,400	30	2,200	3.5	5.5	9.2	7.0
Wahee sandy loam.....	80	-----	-----	35	-----	3	4	6.7	5.5

<sup>1</sup> Animal-unit-month. This term is used to express the carrying capacity of pasture. It is the number of animal units (1 cow, steer, or horse; 5 hogs; or 7 sheep or goats) that can graze a pasture for 1 month without injury to the sod. An acre of pasture that provides 2.5 months of grazing for 2 cows, for example, has a carrying capacity of 5 animal-unit-months.

The older areas more than 40 feet above sea level have been somewhat eroded, and the land features showing marine influences are not so distinct as in the lower areas. The soils at the higher elevation are similar in both chemical and mineralogical composition to those of lower areas, and geological erosion has exposed older deposits to the soil-forming processes. Lucy and Dothan soils developed from older exposed sediments.

The Angelina, Bibb, and Johnston soils formed in recent alluvium that washed from the Coastal Plain and was deposited by the larger streams. These materials are mixed sand and clay and are within the stream flood plain.

A series of sand ridges are on the northeast side of the Ogeechee and Canoochee Rivers and on the present barrier islands. These ridges are quartz sand probably deposited by wind. Kershaw soils formed in this sand.

### Climate

Climate affects the formation of soils through its influence on the rate of weathering of rocks and on the decomposition of minerals and organic matter. It also affects biological activity in the soils and the leaching and movement of weathered materials through the soils.

Bryan and Chatham Counties have a warm, moist climate. The average annual temperature is about 66° F. The temperature averages about 51° in January and about 81° in July. The average annual rainfall is be-

tween 45 and 50 inches. The warm, moist climate promotes decomposition of organic matter almost the year round, and only where the soils are waterlogged do appreciable amounts of organic matter accumulate. The abundant rainfall removes calcium, magnesium, and other basic elements and replaces these cations with hydrogen. As a result, hydrogen is the dominant cation and makes most of the soils highly acid in reaction. Also, the movement of water through the soil translocates other soluble material and colloidal matter into the lower layers. The result is that the soils in Bryan and Chatham Counties have chiefly a sandy surface layer over clay-enriched layers. Exceptions are the Kershaw, Lakeland, and Chipley soils, which formed in quartz sand.

### Relief

Relief, or the differences in elevation, influences soil formation through its effect on drainage, runoff, erosion, and percolation of both water and air through the soils.

Precipitation is not absorbed by the soil where the rainfall rate is faster than the infiltration rate or where the soil is already saturated with free water. Low-lying areas stay wet for extended periods. When a soil is wet decomposition of plant tissue is retarded. Consequently more organic matter accumulates in the surface layer of poorly drained and very poorly drained soils than in better drained soils. Because relief is low throughout most

**SERIES:** The series consists of a group of soils that formed from a particular kind of parent material and have genetic horizons that, except for texture of the surface layer, are similar in differentiating characteristics and in arrangement in the soil profile. Among these characteristics are color, structure, reaction, consistence, and mineralogical and chemical composition.

## *Additional Facts About the Counties*

This section describes the climate, geology, and water supply of Bryan and Chatham Counties.

### **Climate<sup>6</sup>**

Bryan and Chatham Counties are on the upper Georgia coast and extend from the Atlantic Ocean to a maximum of about 50 miles inland. The terrain is mostly nearly level, and much of the area near the coast is marshy. The climate is influenced considerably by the coastal location and the subtropical latitude. Table 10 summarizes temperature and precipitation data, and table 11 gives probabilities of the last freezing temperature in spring and the first in fall.

Summers are warm, humid, and long. The highest afternoon temperatures are in the 90's and high 80's most of the time from May through September. Unusually high temperatures are rare because the ocean has a moderating effect. A temperature of 100° F. or higher occurs in only about half the years. In summer the daily rise in temperature is frequently interrupted by an afternoon thunder shower. Minimum temperatures in summer are usually in the low 70's but occasionally drop below 70. The relative humidity is moderately high in summer. Averages range from 90 percent, or slightly higher, between 1 and 3 a.m. to about 60 percent between noon and 3 p.m.

Winters are usually mild and short. Many of the cold breaks from the north fail to reach the Georgia coast, and those that do move into the area are considerably moderated. Cold spells usually last only 2 or 3 days and alternate with longer periods of mild weather. The ocean exerts an even greater influence on temperatures in winter than in summer. The lowest temperatures average several degrees warmer along the coast than inland. The average number of days that have freezing temperatures ranges from less than 20 along the coast to more than 30 in the colder areas inland. The freeze-free growing season averages about 265 days but is longer on the coast and shorter inland. Relative humidity is lower in winter than in summer. Hourly averages range from about 85 percent between 5 and 8 a.m. to 55 percent between 2 and 4 p.m. Temperatures are generally mild in spring and fall. The daily average temperature gradually increases in spring and gradually decreases in fall. Spring has more rain and wind than fall and also more periods of unsettled weather.

The average annual rainfall is between 45 and 50 inches. Almost half the annual total occurs from June through September. Most warm season precipitation occurs in thunderstorms. These storms are most frequent in summer when they may be expected on about half

of the days. They occur more frequently in the afternoon and usually do not last long. Most precipitation in winter is associated with low pressure centers that move northeastward through or near the survey area. The heaviest rainfall in the area occurs in connection with tropical cyclones. Measurable rainfall occurs on an average of 110 days per year.

Snowfall is rare in coastal Georgia but occasionally occurs. A record fall of 3.6 inches was measured at the Savannah Airport in February 1968. Tornadoes have been reported in the area several times, but no major storm of this type has been recorded. Thunderstorms occur on 65 days during an average year, and some of the more severe storms have damaging winds and hail.

### **Geology<sup>7</sup>**

Bryan and Chatham Counties are in an area that was greatly influenced by the rise and fall of the sea level during the Pleistocene when the glaciers repeatedly advanced and retreated. Although the great ice sheets of the Quaternary age did not reach Georgia, influences of the melted ice sheets are seen today in the series of terraces of the Central Plain, each at a lower elevation seaward. These terraces were deposited or cut when the sea stood at different levels in response to changes in climate. They cannot be dated accurately as yet, but the available evidence indicates these terraces formed during the Pleistocene (6).

At least five ancient marine terraces occur in the survey area. Topographic maps indicate the most apparent shorelines were at 150, 100, 70, 30 and 10 feet above sea level. These shorelines are the peaks of marine invasion. A marine terrace represents deposition between two successive shorelines of the sea, one at the base of the terrace and the other at its top.

The oldest terrace deposits are the highest. In order of decreasing altitude above sea level and decreasing age, the deposits are of the Okefenokee, Wicomico, Penholoway, Pamlico, and Silver Bluff Formations (fig. 15).

The Okefenokee Formation, the oldest and highest of the terraces, is represented by an area north and west of Pembroke in Bryan County.

The Wicomico Formation is fairly extensive in the northern and northwestern parts of Bryan County. This formation generally ranges from 70 to 100 feet in elevation. Marine and coastal features, such as offshore bars and lagoons, are fairly well developed in the area south and southeast of Ellabell. The Wicomico shoreline is least sharply defined, which indicates that the sea stood at this level for a comparatively short time.

The Penholoway Formation occurs in the western half of Bryan County at an elevation of 30 to 70 feet. It is most extensive in the vicinity of the Canoochee River, and it gradually narrows in a northerly direction until it fades out just south of Blitchton. At this point the Penholoway shoreline merges with the Pamlico shoreline.

The Pamlico Formation covers most of Chatham County and the southeastern part of Bryan County. This formation consists chiefly of sand and clay. In Chatham County, at Travis Field, on Cherokee Hill, and at Hunter Air Force Base, are remnants of offshore islands and pos-

<sup>6</sup> By HORACE S. CARTER, climatologist for Georgia, National Weather Service, U.S. Department of Commerce.

<sup>7</sup> By ALEXANDER WRIGHT, geologist, Soil Conservation Service.

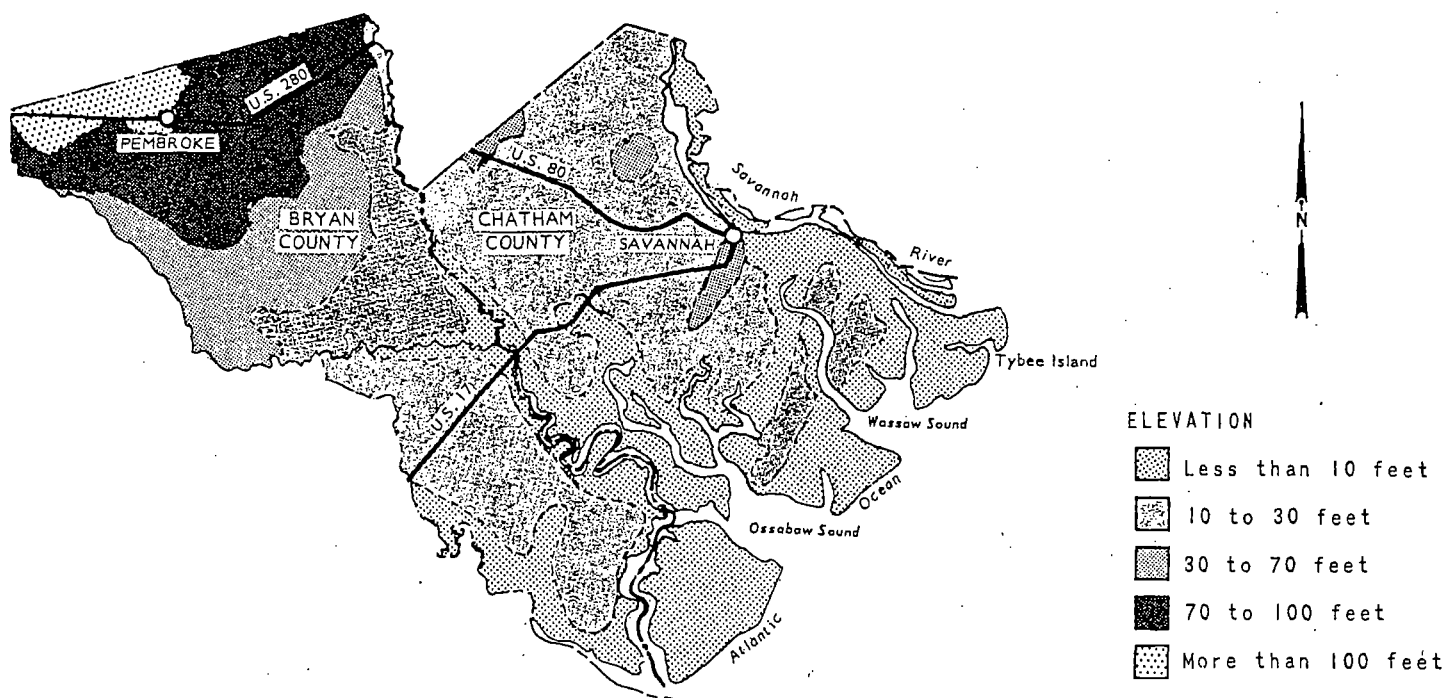


Figure 15.—Location of the marine terraces. The Silver Bluff Formation is at elevations of less than 10 feet; the Pamlico Formation is between 10 and 30 feet; the Penholoway Formation is between 30 and 70 feet; the Wicomico Formation is between 70 and 100 feet; and the Okefenokee Formation is at elevations of more than 100 feet.

ibly barrier beaches of the Pamlico Formation. A large part of the city of Savannah also may be situated on a remnant of an island or barrier beach of the Pamlico Formation. The former salt marshes landward of the Pamlico barrier islands are fairly wide. The elevation of the old marsh ranges from 18 to 25 feet.

The Silver Bluff Formation represents a shoreline 3 to 8 feet above sea level. It includes the intercoastal tidal flats, the salt marsh savannahs, and the offshore barrier islands. Some parts of these barrier islands are fairly recent.

On the northeast and east sides of the major streams, there is generally a sand ridge that probably was deposited by wind.

More recent deposits occur on the flood plains of the major streams. These deposits are of Coastal Plain origin, except along the Savannah River where the sediments are mixed Coastal Plain and Piedmont materials.

## Water Supply

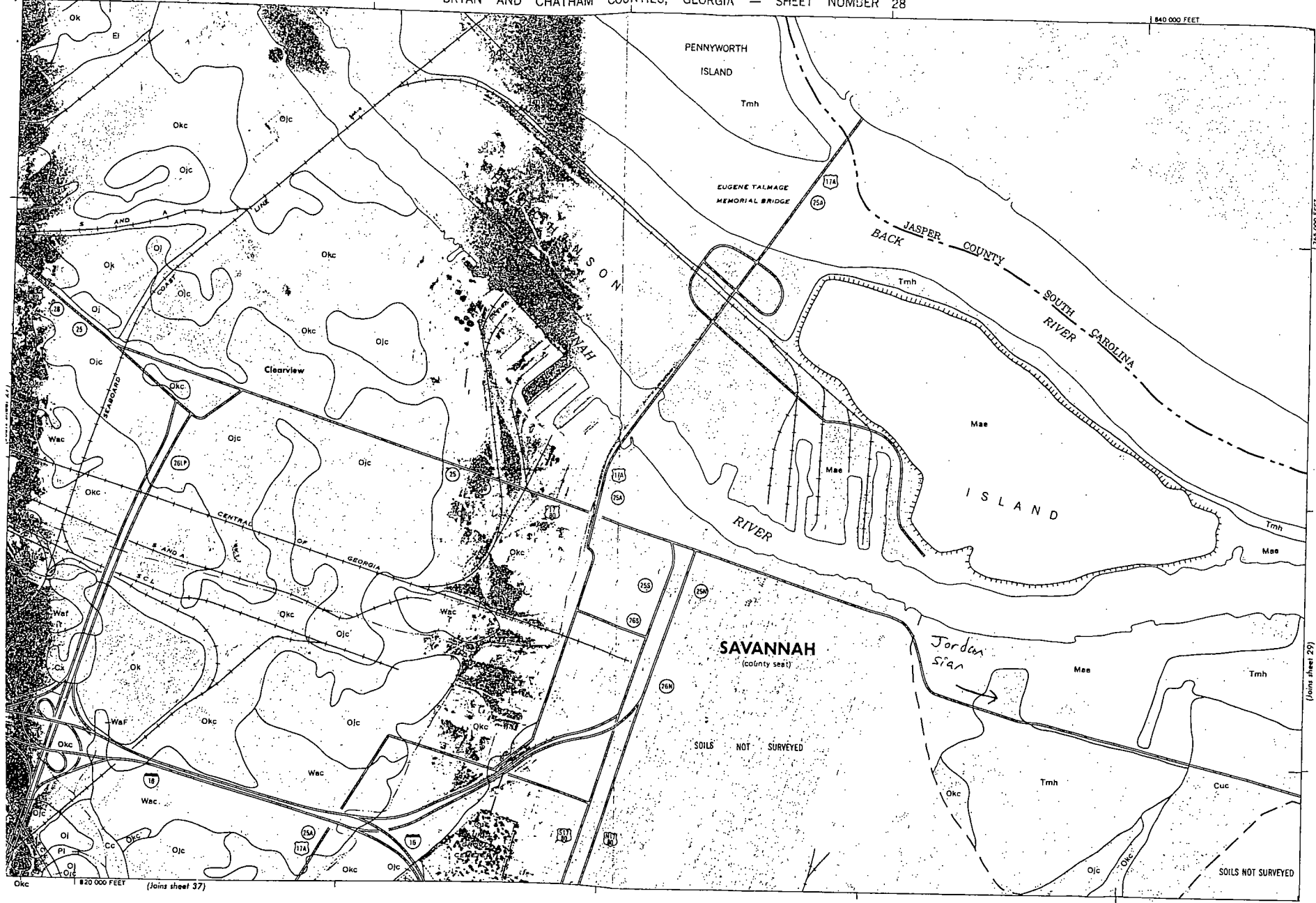
The major part of the supply of surface water is contained in the Savannah, Ogeechee, and Canoochee Rivers. The headwaters for the Savannah River originate northwestward in the Appalachian Mountains, and the Ogeechee and Canoochee Rivers originate in the Coastal Plain. Most of the streams that control local drainage have shallow poorly defined channels and stop flowing in the dry periods. The city of Savannah obtains most of its water supply from the Savannah River. Shallow wells supply some water, but the danger of pollution and the unavailability of a reliable source of underground water

have led to increased use of the underground aquifer throughout the two counties.

The underground aquifer that underlies the survey area consists of three limestone formations that act as a single hydrologic group (4). Above and below the aquifer are beds of clay that confine the water in the limestone. The upper confining bed is of Miocene age, and the lower is of middle Eocene age. Wells are usually cased in the top part of the limestone, and they extend below the casing. The yield depends on the diameter of the well and ranges from 500 to 2,000 gallons per minute. The top of the aquifer is closer to the surface in the eastern part of Chatham County and dips in a southwest direction. The top is about 150 feet below mean sea level in the eastern part of Chatham County and is about 300 feet below mean sea level along the boundary between Bryan and Liberty Counties.

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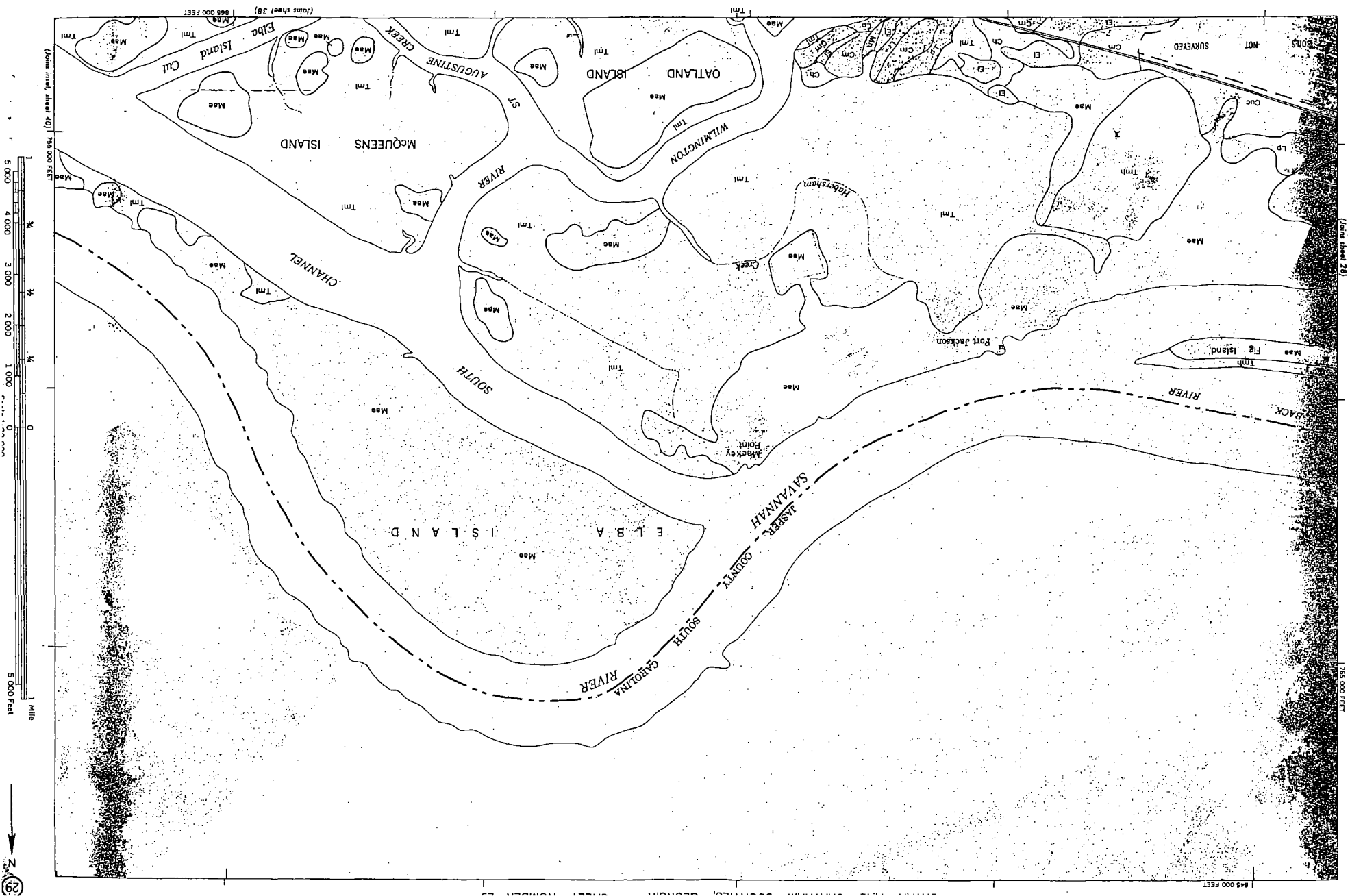
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1954. A SYSTEM OF SOIL CLASSIFICATION. Highway Res. Bd. Proc. Pub. 324, pp. 509-514, illus.
- (2) AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS.  
1961. STANDARD SPECIFICATIONS FOR HIGHWAY MATERIALS AND METHODS OF SAMPLING AND TESTING. Ed. 8, 2 v., illus.
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1938. SOIL CLASSIFICATION. U.S. Dept. Agr. Ybk., pp. 970-1001, illus.
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1956. AVAILABILITY AND USE OF WATER IN GEORGIA. Prepared in cooperation with U.S. Dept. of Int., Geol. Survey Bul. No. 65, 329 pp., illus.

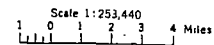


This map is one of a set compiled in 1971, as part of a soil survey by the United States Department of Agriculture, and the University of Georgia, College of Agriculture, Experiment Station, and the University of Georgia, College of Marine Studies, for the purpose of determining the soil resources of the Savannah River area. The map is one of a set of 28 sheets, each covering a 10,000-acre area. The map is one of a set of 28 sheets, each covering a 10,000-acre area.



100





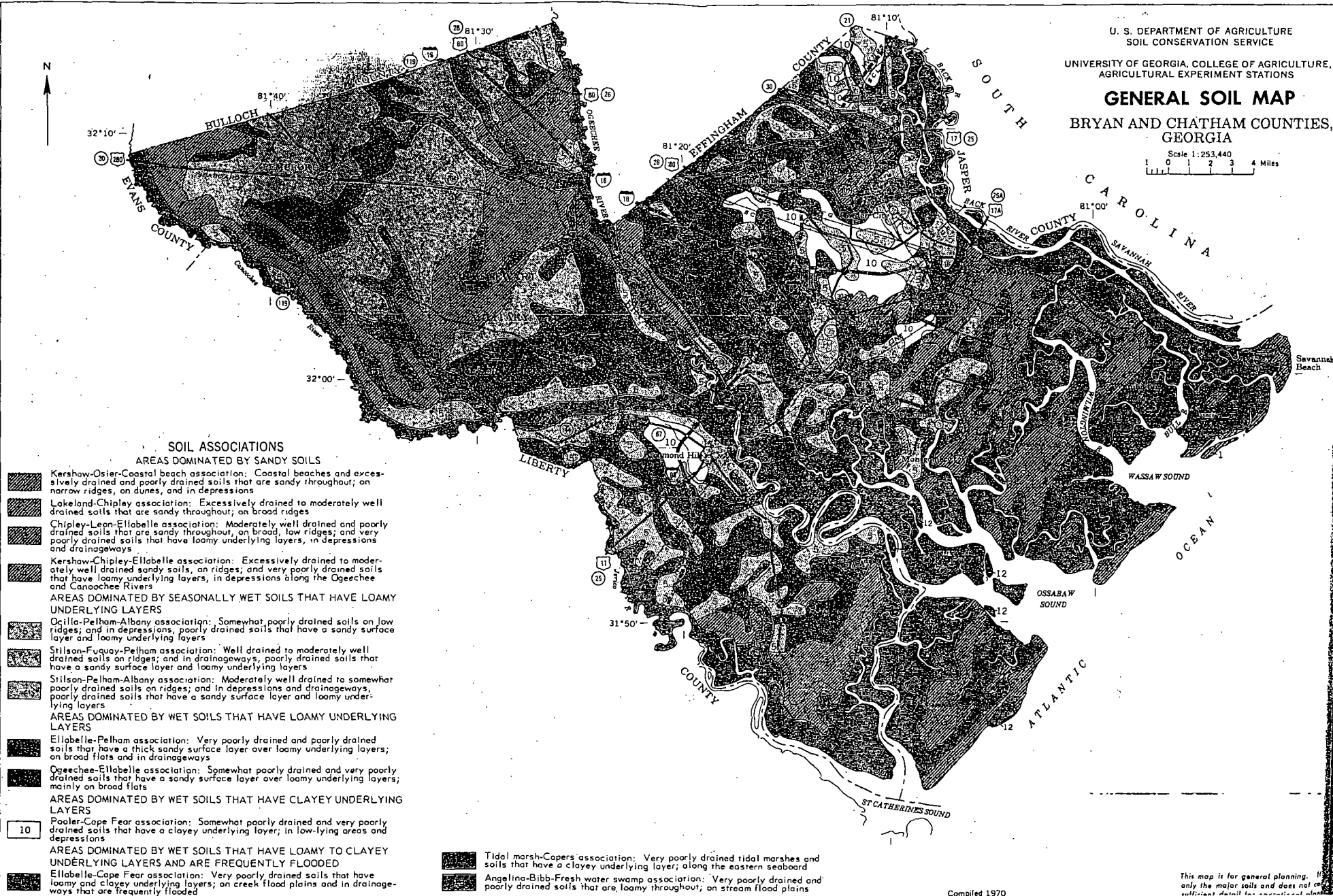
U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

UNIVERSITY OF GEORGIA, COLLEGE OF AGRICULTURE,  
AGRICULTURAL EXPERIMENT STATIONS

## GENERAL SOIL MAP

BRYAN AND CHATHAM COUNTIES,  
GEORGIA

Scale 1:253,440  
0 1 2 3 4 Miles



Compiled 1970

This map is for general planning. It only the major soils and does not contain sufficient detail for agricultural planning.

(NAME)

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(DATE)

File Review - Waste

Estimate - 36X5 review time

U.S. DEPARTMENT OF COMMERCE  
LUTHER H. HODGES, Secretary

WEATHER BUREAU  
F. W. REICHELDERFER, Chief

TECHNICAL PAPER NO. 40

# RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and  
Return Periods from 1 to 100 Years

Prepared by

DAVID M. HERSHFIELD

Cooperative Studies Section, Hydrologic Services Division

for

Engineering Division, Soil Conservation Service

U.S. Department of Agriculture

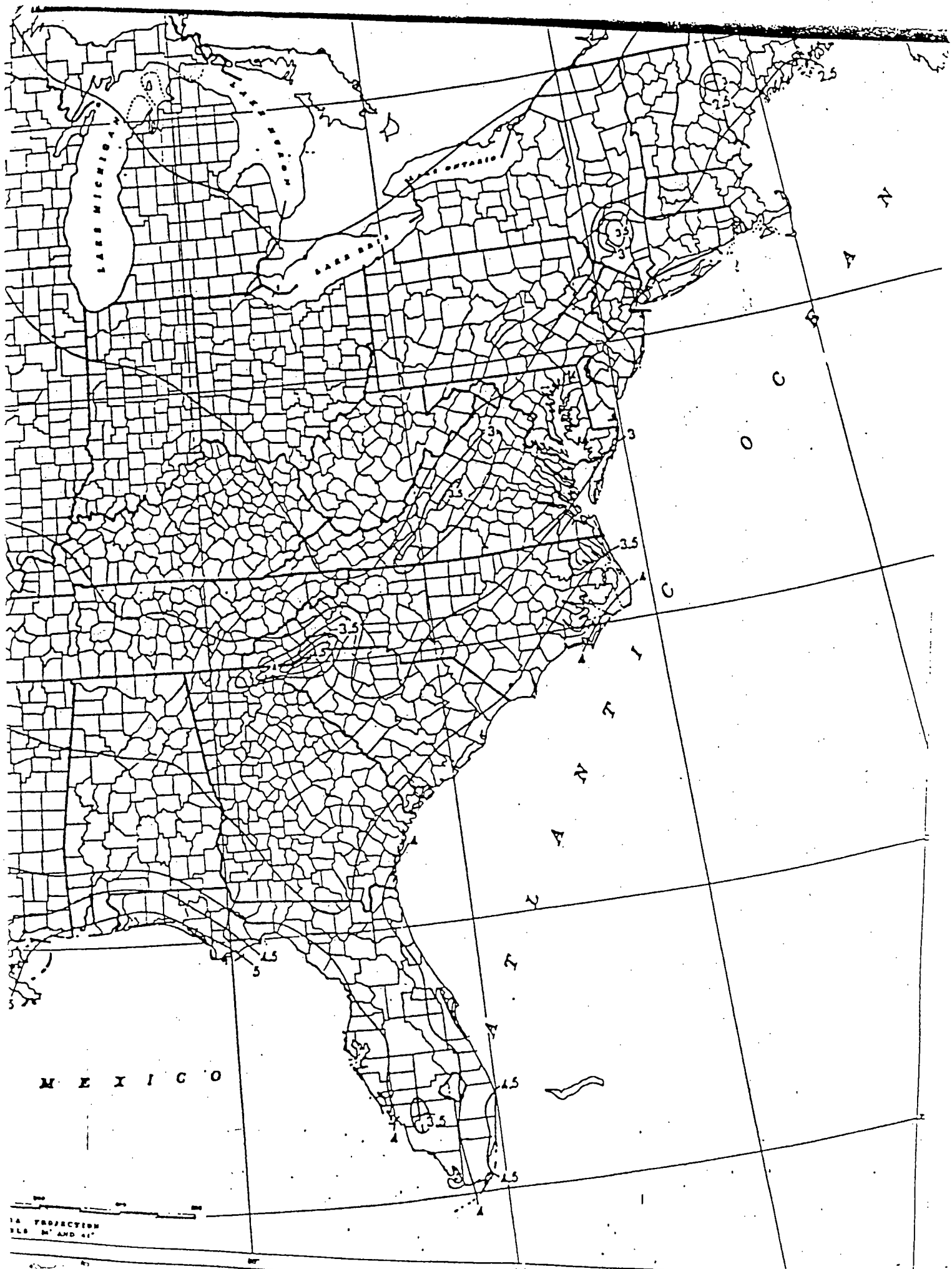


WASHINGTON, D.C.

May 1961

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Price \$1.15

Reference 7



M E X I C O

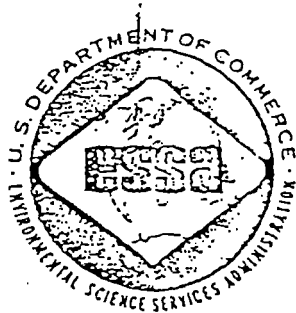
1:100,000  
S.E. 1/4 AND 41"

Reference 8



# CLIMATIC ATLAS OF THE UNITED STATES

Environmental Science Services Administration . Environment



U.S. DEPARTMENT OF COMMERCE  
C. R. Smith, Secretary

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
Robert M. White, Administrator

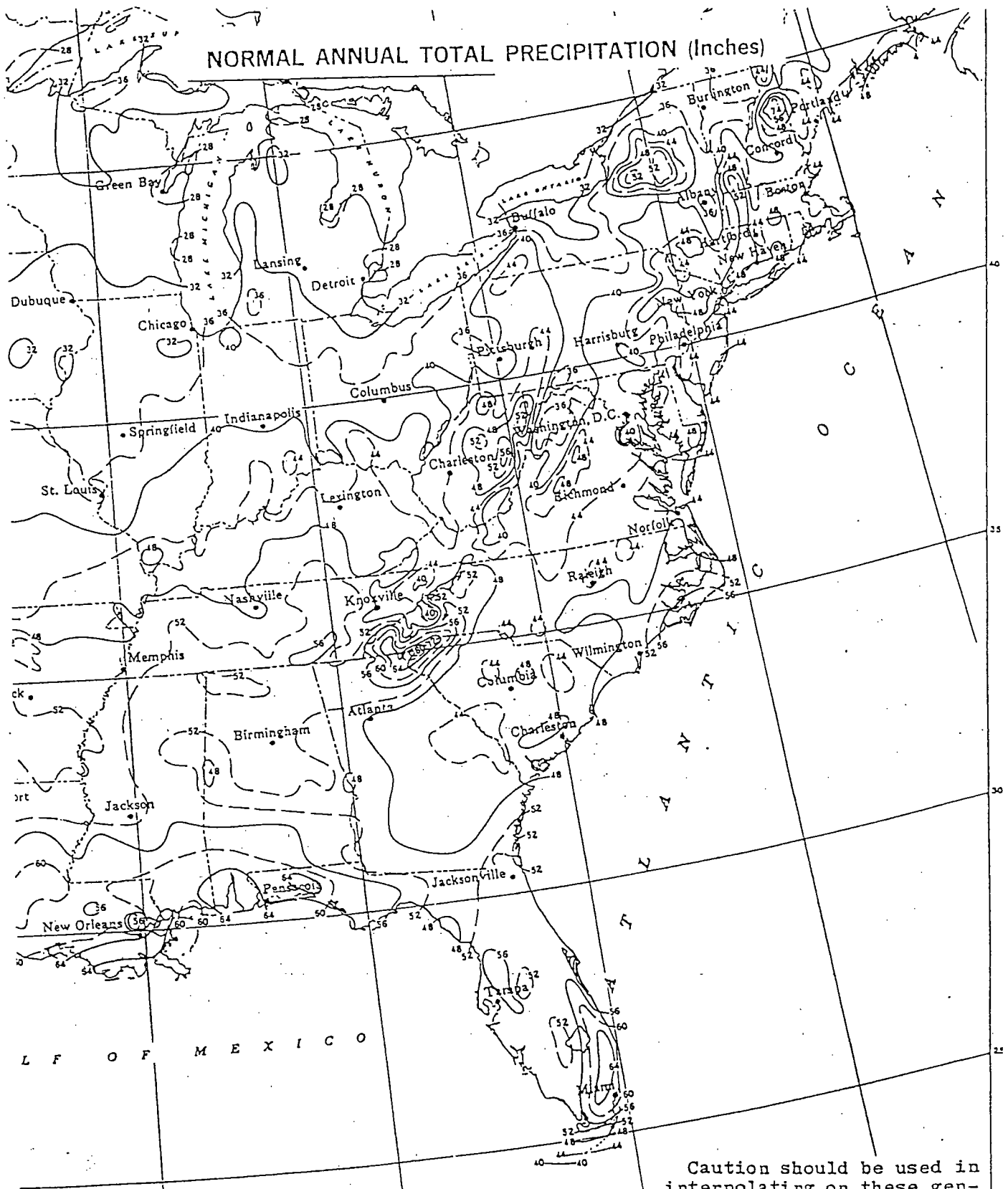
ENVIRONMENTAL DATA SERVICE  
Woodrow C. Jacobs, Director

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JUNE 1968

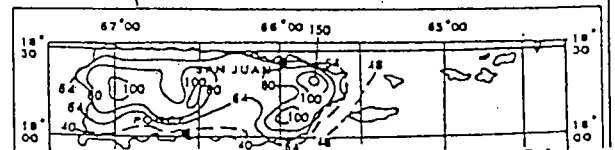
REPRINTED BY THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
1983

# NORMAL ANNUAL TOTAL PRECIPITATION (Inches)

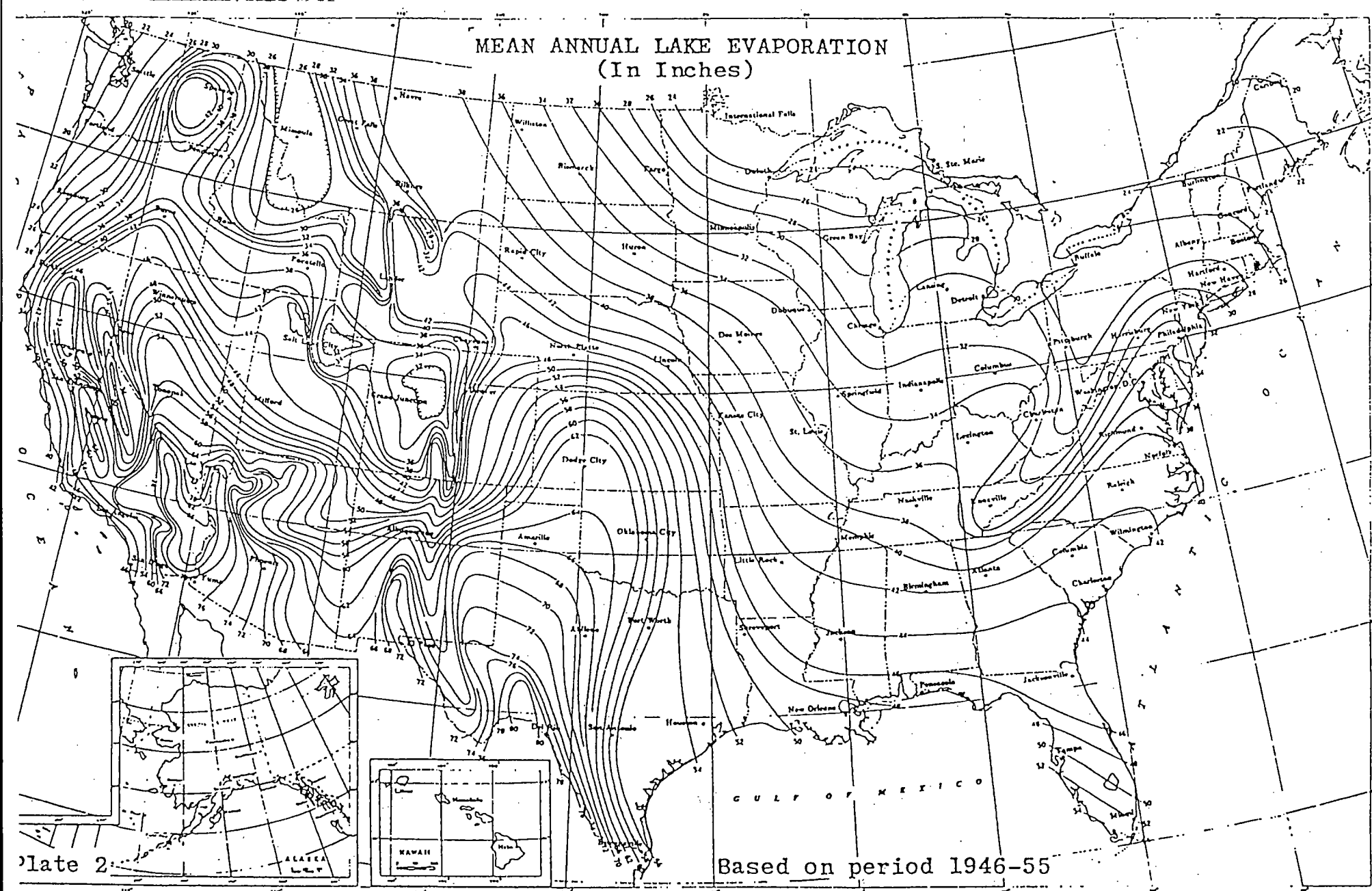


Caution should be used in interpolating on these generalized maps, particularly in mountainous areas.

0 50 100 200 300 400 500 MILES  
ALBERS EQUAL AREA PROJECTION - STANDARD PARALLELS 29° AND 45°



# MEAN ANNUAL LAKE EVAPORATION (In Inches)



Based on period 1946-55

Reference 9

PROPERTY TRANSACTION  
ENVIRONMENTAL ASSESSMENT  
AND VERIFICATION SAMPLING  
LOCKHEED SHIPBUILDING  
SAVANNAH DIVISION

SEPTEMBER 7, 1988



McLure Engineering

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PROPERTY TRANSACTION ENVIRONMENTAL ASSESSMENT  
AND VERIFICATION SAMPLING LOCKHEED SHIPBUILDING  
SAVANNAH DIVISION - SEPTEMBER 7, 1988

INTRODUCTION

An environmental assessment and verification sampling program was conducted at the Lockheed Shipbuilding Company's Savannah Division facility at 3126 River Drive, Thunderbolt, Georgia during June, July and August 1988. The work was conducted in two phases. Phase I consisted of an initial site survey and design of a baseline sampling program for the site. The site survey included employee and regulatory staff interviews and review of city, county, state and federal regulations, and permits. Phase II consisted of asbestos sampling, soil sampling, groundwater monitor well construction, water quality sampling, and marine sediment sampling. This report summarizes the results of both Phase I and II investigations.

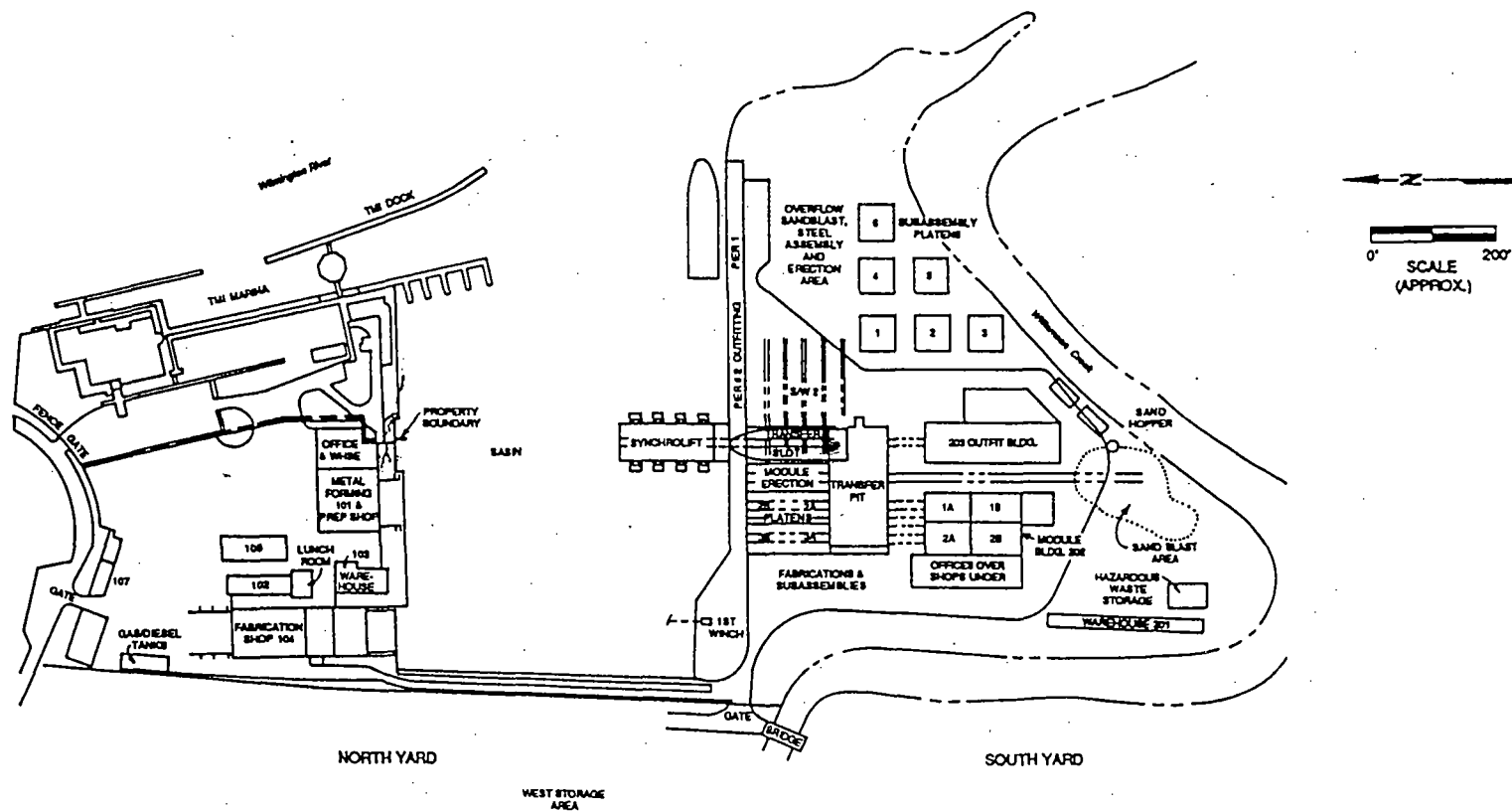
The Lockheed Savannah Division facility is located along the Wilmington River in Thunderbolt, Georgia. A schematic drawing of the facility is shown on Figure 1. The features pertinent to this assessment are:

- . Building 101 - Storage and small component manufacturing;
- . Building 102 - Warehouse, lockers, and welder repair;
- . Building 103 - Warehouse, offices;
- . Building 104 - Fabrication building;
- . Building 105 - Descaling and painting building;
- . Building 107 - Human Resources building;
- . Aboveground fuel storage area;
- . Thunderbolt Marine, Inc.;
- . West Storage Area;
- . Building 201 - Warehouse;
- . Building 202 - Module building (including machine, pipe cutting, electrical shops, and offices);
- . Building 203 - Outfitting building;
- . Sandblast area;
- . Hazardous waste storage area;
- . Subassembly platens 1-6;
- . Subassembly platens 1A, 1B, 2A, 2B;
- . Pier #1;
- . Pier #2; and
- . Basin.

PHASE I INVESTIGATION

The initial investigations at the Lockheed facility were conducted on June 30, and July 1, 1988. The investigations consisted of a site survey and review of records available from:

FIGURE 1  
LOCATION MAP



- . City of Thunderbolt, Fred Sutton;
- . City of Savannah;
- . Chatham County;
- . Georgia Department of Natural Resources (DNR), Savannah Regional Office, John Merriman;
- . Georgia DNR Air Quality Control Division, William Montgomery;
- . Georgia DNR Environmental Protection Division;
- . Georgia DNR Hazardous Waste Management Program, William Munday;
- . Georgia DNR Water Protection Branch, Michael Kreson; and
- . U.S. Coast Guard Operations and Marine Environmental Division. Lt. Richard Gaudiosi.

A complete list of interviews and documents reviewed are included in Appendix A. The following describes the results of our investigation.

#### BACKGROUND

The general history of the Savannah Division facility was supplied by Mr. Jesse Corbett. Mr. Corbett has worked at the facility since 1978 and is familiar with the site history since the late 1950's previous to Lockheed leasing the property.

The Thunderbolt Marine, Inc. (TMI) marina, North Yard, South Yard, and West Storage Area are owned by TMI. Lockheed Savannah Division operates the North Yard and South Yard under a lease with TMI.

In the 1950's the site was developed on reclaimed marsh land between the Wilmington River and Williamson Creek. Prior to the 1950's, the area along the Wilmington River was used by shrimp boats for docking. The marina and dock were in place when the property was purchased by TMI approximately 25 years ago (about 1963). The South Yard was a low-lying marsh in 1963. The basin between the North Yard and South Yard existed but there were no seawalls to prevent erosion of the sediments along the edge of the basin. TMI dredged the basin, installed the seawalls, and built up the South Yard using dredged materials. Considering the long history of use by shrimp boats, the bottom dredged material used in the South Yard could contain bilge waste due to the practice of shrimp boats pumping bilge waste directly into the Wilmington River and the basin between the two yards. The South Yard was constructed on driven pilings that were filled with dredge material. About 50 to 60 percent of the yard was surfaced with asphalt prior to construction of the buildings.

TMI constructed pleasure boats, fishing boats, and barges at the facility from 1963 to 1986. Pleasure boats were on display in the western part of Building 101, which was the first structure built in the North Yard. When Lockheed leased the property all of the buildings shown on Figure 1, existed except for Building 105 and the Hazardous Waste Storage Facility. These facilities were added by Lockheed in 1986 and 1987.

Two aboveground fuel storage tanks are located in a bermed area about 80 feet north-northwest of Building 104. The southern tank has capacity for approximately 20,000 gallons of diesel. The northern tank has capacity for approximately 10,000 gallons of unleaded gasoline. These tanks were installed by TMI approximately 20 years ago. According to Mr. Fred Sutton, Assistant City Administrator for the City of Thunderbolt, TMI has obtained the required permits for the tanks. The installation was inspected and approved by an inspector from the Thunderbolt Fire Department. The gasoline and diesel is transferred in underground pipes from the storage tanks to the three storage tanks at the TMI marina. The fuel is then dispensed from three pumps to boats at the TMI dock. Diesel is also transferred in an underground pipeline from the storage tank to a pump at the northwestern edge of the basin to fuel boats owned by TMI. Lockheed does not use the fuel stored in these tanks.

Gasoline and diesel for Lockheed vehicles are supplied by two portable 200-gallon tanks. The tanks are filled in the Hazardous Waste Storage Area by a local vendor. The portable tanks are moved around the Lockheed facility by a fork lift to dispense the fuel. The supply delivery system for the portable tanks is gravity feed. The fork lift elevates the portable tank to supply the energy for fuel dispensing when the tank is less than one-quarter full. When the tank is more than one-quarter full the gravity feed system will operate with the tank on the ground.

The electricity and natural gas for the site are supplied by Savannah Electric and Power. Water supply and sanitary sewer hookup are provided by the City of Savannah. There are three oil-cooled transformers on the North Yard facility. Two are General Electric transformers owned by Savannah Electric and Power. The third transformer is manufactured by Wagner and is owned by TMI. There were no visible leaks from the transformers.

The sanitary sewer hookup is not intended for industrial waste. Waste oil and waste solvent at the Lockheed facility are collected and transferred to the Hazardous Waste Storage Area. Ashland Chemical Company transports the waste oil and waste solvent off site. Storm drains in the North and South Yards drain into the basin and Williamson Creek.

#### SITE SURVEY

Landing Craft Utility (LCU) are constructed at the Savannah Division facility by Lockheed Shipbuilding for the U.S. Army. In brief, the construction process consists of:

- . cutting raw stock steel with plasma cutter;
- . descaling and priming the rough cut steel;
- . grinding the steel edges using pneumatic grinders;
- . welding steel together with heli-arc, oxy-acetylene, and carbon dioxide-argon welders;
- . sandblasting and second coat painting;

- . installation of power plants and air conditioning units;
- . assembly and installation of electric components;
- . machining and installation of hydraulic lines;
- . final assembly of the components into the LCU; and
- . final paint application to interior and exterior of the LCU.

Descaling is done using steel abrasive. Sandblasting is done using silica sand and other abrasives. Underground gas lines supply oxygen, natural gas, and compressed air. Oxygen for the underground lines is supplied by 3-foot diameter 8-foot long cylinders at three locations on the facility. Compressed air is used to power pneumatic tools. Compressed air is supplied by fixed Sulair compressors and mobile General Electric compressors. Welding gas is supplied from 320 cubic-foot cylinders. There were approximately 60 oxygen cylinders, 40 acetylene cylinders, and 60 carbon dioxide-argon cylinders observed during the site survey.

Paint and painting equipment are cleaned using solvents from 55-gallon drums. There were approximately 50 drums containing solvents and hydrocarbons observed during the site survey. Paint is stored in 55-gallon, 5-gallon, and 1-gallon cans, and about 50 spray cans of paint were observed during the site survey. Hydraulic oil, lube oil, automatic transmission fluid, and antifreeze are stored in 55-gallon drums. There were approximately 30 drums of oil and antifreeze observed during the site survey.

A brief discussion of manufacturing processes, chemical storage, and/or potential environmental concerns at the Lockheed Savannah facility follows. Buildings with one hundred series numbers are located in the North Yard and two hundred series in the South Yard.

#### Building 101 - Storage and Small Component Fabrication

There were two sets of ceiling tiles in this building where newer tiles were set about 10 feet lower than the in-place older tiles. Floor tiles could be pre-1973 and could also contain asbestos. Mr. Jesse Corbett stated that the U.S. Navy had inspected the facility for asbestos within the last 5 years. Documentation of the asbestos survey was not found during the record review at the facility. A hydraulic cutter and press break observed in the building use hydraulic oil, but there appears to be no significant loss of oil onto the floor. Welding is done in the building with carbon dioxide-argon (CO<sub>2</sub>-Ar) gas and oxygen.

The potential presence of asbestos in ceiling and floor tiles is the only potential environmental concern noted at this building.

#### Building 102 - Warehouse, Lockers, Machine Repair

The south end of the building is used for lunch room, lockers, and showers. The north end is used for equipment maintenance. Small quantities of oil and grease are used in the north end of the building. Concrete floors and fiberglass insulation were noted in the building.

To the west of Building 102 is the area where oil is changed in Lockheed trucks and oil changes and repairs are done on mobil cranes and other vehicles. A dispensing cradle on asphalt holds five 55-gallon drums of lube oil, hydraulic oil, and automatic transmission fluid (ATF). An 80-gallon container for dispensing mineral spirits (resting on asphalt) is also located along the west edge of the building. Just south of the six virgin product containers is a 250-gallon waste oil container in a steel containment box that is approximately 5 feet by 3 feet by 1 foot high that rests on soil. There is staining on the asphalt where vehicle repairs have resulted in fluid draining onto the asphalt. There is no drip containment under the dispensing cradle so that hydraulic oil, lube oil, and ATF are dripping onto the asphalt. The area is periodically washed down and drains to the soil south of the dispensing cradles next to the waste oil container.

Along the outside west edge of Building 102 is a Sulair compressor that is leaking minor amounts of hydraulic oil. The stain extends about 1 foot around the base of the compressor. The oil stains associated with the dispensing cradle, vehicle repair, and air compressor are the only potential environmental concerns noted in and around Building 102.

A Wagner transformer (not owned by Savannah Electric and Power) is located next to this building. Although there was no observed stains associated with the transformer, PCB samples are necessary to verify the absence of PCBs.

#### Building 103 - Warehouse, Offices, Welding Equipment Maintenance

This building is sub-divided into three areas: office space, tool room, and heli-arc welding repair. The office space has floor tiles that may contain asbestos. No areas of environmental concern were noted in the tool room. The welding repair area contains one 55-gallon drum of "Electric Kleen" solvent. The solvent is sprayed onto parts at the drum and carried to work benches. There were no stains around the solvent drum to suggest spills had occurred.

#### Building 104 - Fabrication Building

The plasma cutter and associated water holding tank are housed in this building. The bottom foresection of the LCU is constructed in this building and is pulled out into the basin when construction is complete. The plasma cutter uses nitrogen gas and compressed air to cut the steel plates. The plasma cutter creates essentially no scrap so the holding tank does not need to be emptied or cleaned out. Welding is done with argon-helium, oxy-acetylene, and heli-arc systems. Nitrogen is supplied by a large cylinder. Oxygen is supplied by a 3-foot diameter by 8-foot long cylinder located outside Building 104. Argon-helium, oxygen, and acetylene are supplied by 300-cubic-foot cylinders. Welding flux in a 10-gallon container is also used in the construction process.

#### Building 105 - Descaling and Primer Paint Application

Raw stock steel plates are descaled and painted with primer in the building. The mill scale is removed by a wheelabrator which uses small steel shot as an abrasive. The waste shot is sucked up into a bag house operation which removes the debris to 55-gallon drums outside the building. The plates then move into an automatic spray booth where the paint is applied. The overspray is captured on a filter media which is discarded in commercial trash bins. The volatile components of the paint are carried up to the top of the building to be discharged to the atmosphere. The paint booth discharge is covered by an air quality permit issued by William Montgomery of the Georgia Air Quality Control Section of the Department of Natural Resources.

Although paint overspray and volatile components of paint are of environmental concern, the paint application and associated waste disposal appear to comply with regulatory standards.

#### Building 107 - Human Resources

Personnel and other employee records are contained in this building. The building was remodeled by Lockheed from floor to ceiling in 1986. No sources of environmental concern were identified in Building 107.

#### Aboveground Fuel Storage Area

The 20,000-gallon diesel tank and 10,000-gallon unleaded gasoline tank (located in the north west corner of the site) are not on the property that Lockheed leases and Lockheed does not use fuel from these tanks. There is no documented data to suggest that operations by Lockheed have affected the underground product lines associated with the tanks.

#### Thunderbolt Marine, Inc.

This area is outside the scope of work for review. A brief visit onto the property identified no significant sources of chemicals to soil, groundwater, or the Wilmington River. Three aboveground fuel tanks are located on this property to dispense fuel to boats at the TMI Marina. The tanks, which are filled through underground lines from the large tanks mentioned above, appeared to be sound.

#### West Storage Area

Lockheed is storing a limited amount of old vehicles and equipment across Sylvan Island Road to the west of the facility. The following equipment was observed in the Lockheed section of the yard:

- . pipe fittings;
- . old tires for cranes;
- . a fork lift;

- . a Dodge 1/2 to 3/4 ton truck;
- . pier pilings;
- . spools of wire rope; and
- . 4 ship/truck containers with equipment that can not be exposed to the elements.

#### Building 201 - Warehouse Storage

Wood products are stored in this building. No potential sources of environmental concern were identified in Building 201.

#### Building 202 - Module Building

This building includes a machine shop, a pipe cutting shop, an electrical component shop, and offices for management, production, and accounting along with a large open area used for component construction.

The machine shop has 3 large lathes, a radial drill, a milling machine, and 2 drill presses that require cutting oil for operation. Overspray of cutting oil is generally contained by recycling units on the machinery. Overspray not contained by the machinery ends up on the concrete floor. The oil overspray is periodically adsorbed with dry sweep and put into the commercial bins for disposal. The concrete floor in the machine shop was stained and generally oily around the machinery. One 55-gallon drum of cutting oil was observed in the machine shop along with argon gas cylinders used for welding stainless steel.

The pipe cutting and bending area contained pipe cutters, band saws, a computerized pipe bender, a small bead sandblasting unit, oxygen, acetylene, CO<sub>2</sub>-Ar cylinders, and heli-arc welding equipment.

The electrical shop contained small electrical components for the LCU. Oil and solvents were dispensed from pint cans in this area. An air-cooled transformer is located just outside the electrical shop.

The office space along the western edge of the Building 202 has ceiling and floor tiles. The tiles are recent additions and therefore are not considered to potentially contain asbestos.

The large component construction area in the north part of the building was being used to store LCU power plant equipment and for small part painting. There was no permanent equipment for painting observed, but paint overspray was present on the asphalt floor. There were oxygen and acetylene cylinders present for welding.

The asphalt paving behind Building 202 ends approximately 50 to 100 feet from the building. Along the edge of the asphalt was sand that appeared to contain an oil residue. The area noted was 10 feet wide by 20 feet long at the edge of asphalt.

Potential environmental concerns associated with Building 202 are oil and machine cuttings in the machine shop and the sand that appears to have an oil residue at the end of the asphalt south of the building. The oil on the concrete machine shop floor has low potential to have entered the underlying soil. Disposal of the oil-soaked dry sweep and cuttings is of concern.

#### Building 203 - Outfitting Building

This building was used for furniture and component storage, construction, and painting of the LCU super structure. The stock stored in this building included chairs, desks, sinks, refrigerators, insulation panels, contact cement, floor tiles, and quick set paste. The super structure was sprayed with a white lacquer coat in this building. On the eastern edge of the building, about 65 gas cylinders for welding were stored including oxygen, acetylene, and CO<sub>2</sub>-Ar. Seven oxygen and argon cylinders were noted inside the building for welding.

Just outside the south end of the building is a Sulair air compressor used for sandblasting. The compressor has leaked hydraulic oil and an approximately 10 foot diameter area of oil soaked sand and dust surrounds the compressor.

The oil stain associated with the air compressor on the south side of Building 203 was the only area of potential environmental concern noted for this building.

#### Sandblast Area

A rail line extends between Buildings 202 and 203 south to the sandblasting area. The aft section of a LCU was being sandblasted and painted during the site tour. A 20-foot diameter sand hopper is located south of Building 203 and supplies the sand used for sand blasting the metal. Compressed air is supplied by two stand-alone mobile compressors. Mr. Corbett stated that a natural sand grit was the only material used to sand blast. Mr. Paul Norman, Lockheed Savannah Health and Safety specialist, stated that in the past a man-made sand blasting product (Black Beauty) was used and that this product required special handling for disposal. The materials safety data sheet for Black Beauty state that the product is 100 percent silica.

Paint is also applied to the LCU at this point. There are two paint sheds used to store paint, paint equipment, and personal equipment for the painters. The sheds are about 200 feet northeast of the sand hopper building. The sheds are built on top of dredge fill. One trailer is used for paint storage. The trailer contained about 50 5-gallon and, 20 1-gallon cans of paint, and a 55-gallon drum of methyl ethyl ketone (MEK) for cleaning spray guns and parts. There were 20 empty 5-gallon cans without tops stacked at random outside the trailer. There was evidence inside the trailer that paint and solvent had been spilled onto the floor. There were no obvious paint spills outside the trailer on soil and

sandblasting debris that surrounds the trailer. It should be noted that this area is covered by sandblasting debris, so any spilled paint could be covered later by settling debris from sandblasting.

The second trailer contains lockers for the painters and parts for spray guns.

Potential sources of environmental concern noted in this area are used sandblasting grit, and paint and solvent use, handling, and storage associated with the paint storage trailer.

#### Hazardous Waste Storage Area

Both virgin product and waste product are stored at this facility. The following materials and containers were observed during the site survey:

- . Two 10,000-gallon waste oil tanks;
- . 1,000-gallon unleaded gasoline tank;
- . 500-gallon diesel tank;
- . 200-gallon portable unleaded gasoline tank;
- . 200-gallon portable diesel tank;
- . Two 200-gallon portable waste oil tanks; and
- . Approximately 54 55-gallon drums of MEK, methyl isobutyl ketone, xylene, liquid caustic soda, and waste solvent.

The 10,000-gallon waste oil tanks are contained within a concrete bermed structure that is approximately 3 feet high. Approximately 0.1 feet of water with an oil sheen was observed in the containment structure during the site survey. The fluid is periodically drained to the ground from the south side of the containment structure.

The 1,000-gallon unleaded gasoline and 500-gallon diesel tanks are contained within a bermed structure that is 0.5 feet high. There is approximately 10 to 15 feet between the two tanks and the berm appears to be capable of containing the contents of a tank in the event of a leak.

Drums are stored on concrete within the covered structure. However, three barrels of waste MEK were stored on the ground 50 feet south of the covered structure. The portable 200-gallon diesel and unleaded tanks were located in front of the covered structure setting on the ground. The two portable 200-gallon waste oil tanks were located 50 feet south of the covered structure on the ground.

The waste oil is periodically picked up by Waste Oil Recovery Service of Jacksonville, Florida to be recycled. Mr. Paul Norman stated that no permits were required by the State of Georgia to store the waste oil because Lockheed does not generate or store enough waste oil to require a permit. Waste solvent is periodically picked up by Ashland Chemical Company and shipped to a hazardous waste site under a hazardous waste manifest.

generator  
Bioscience  
Oct 30, 1988  
ref 15  
FCC 3  
ethanol  
benzene

Potential sources of environmental concern noted in the Hazardous Waste Storage Area are the drainage area from the containment structure for the 10,000-gallon tanks, the ground around the 200-gallon portable tanks used for transporting diesel and unleaded gasoline, and the general vicinity of the area that is unpaved where waste solvent or oil may be temporarily stored or handled.

#### Subassembly Platens 1 Through 6

These platens are not as well defined as shown on Figure 1 because all of the platens have not been constructed, but the areas indicated generally contain discreet operations. The location of the six platens was taken from a Lockheed design drawing. Platens 1 through 3 are used to construct the 3 decks of the superstructure for the LCU. Equipment used in these areas are grinders, heli-arc welders, and welding using CO<sub>2</sub>-Ar, oxygen, and natural gas.

Platen 4 is used for construction of submarine missile repair modules. During the site tour hydraulic equipment was being installed and tested.

Platen 5 is used to park and repair large cranes used for lifting components of the LCU. The soil in this area had hydraulic fluid or diesel stains. The soil was stained in patches and areas with standing water were covered with an oil sheen.

Platen 6 is used for storage of large block and tackle equipment, ship anchor chains, and subcontractor supply trailers. The only notable product stored in this area is 200 5-gallon cans of paint. Paint is not used in this area.

The potential source of environmental concern noted in this area is the crane parking and repair area. Hydraulic fluid or fuel appears to have leaked onto the ground from the heavy machinery stored there.

#### Subassembly Platens 1A, 1B, 2A, 2B

These areas are used for construction of the hull of the LCU. Grinders and welders are used in this area. Welding is done with heli-arc welders and with oxy-acetylene or CO<sub>2</sub>-Ar gas. Other facilities in this area include: an old emergency fire pump shed; a natural gas tank with compressor; an electric winch for pulling hull components out of Building 104; employee office trailers; and sewage lift station. There were no potential sources of environmental concern identified in this area.

#### Pier #1

The first complete LCU (#2001) was docked at Pier #1. There were approximately 40 55-gallon drums of hydraulic oil and anti-freeze in the vicinity of the ship to service the LCU. All drums were covered, 10 drums were stored on concrete, and 30 drums were stored on soil. None of the drums appeared to leak and no stains were observed.

## Pier #2

No ship was docked at Pier #2. Subcontractor trailers are located south of the pier. A single drum of each of the following chemicals was observed: freon, hydraulic oil, and soap. About 30 spools of wire rope were also stored in this area. No stains or obvious contamination were identified in the vicinity of Pier #2.

## Basin

The 7-acre basin between the South Yard and North Yard is used by Lockheed to move ship components from Building 104 to the South Yard and to dock the completed LCUs. The basin is also used by TMI to dock dredge barges. There has been one documented Lockheed spill in this basin during the two years that Lockheed has been at the site. About 25 gallons of hydraulic fluid was accidentally poured into the basin during the first quarter of 1988. The spill was immediately reported to the U.S. Coast Guard Marine Safety Division in Savannah. There have been numerous "mystery spills" in the vicinity of the basin along the Wilmington River. It is common practice among local commercial boats and pleasure boats to pump bilge water, containing oil and gasoline or diesel, directly into the river. There have been about ten "mystery spills" on the Wilmington River reported to the Coast Guard near the Lockheed facility in the last two years. Due to tidal currents, spills occurring along the Wilmington River can end up migrating into the basin.

Another potential source of chemicals to the basin includes prior operations at the facility where sanding or painting of vessels may have resulted in antifouling paint or paint debris ending up in the water. Historical operations, past construction practices in the basin, or bilge water from sources other than Lockheed or TMI may have resulted in chemicals filtering down into basin sediments and are of environmental concern, especially paint related metals or hydrocarbons.

## SUMMARY OF SURVEY FINDINGS

The Lockheed Savannah facility is relatively clean considering the type of construction at the site and the size of the operations conducted. However the procedure for handling, storage, use, and disposal of wastes generated at the site could be improved. In addition, maintenance of heavy machinery such as cranes or trucks should be conducted in a garage area with a bermed concrete floor so that spills are contained.

Based on the site survey and regulatory review the following environmental concerns were identified:

1. The potential presence of asbestos in ceiling and/or floor tiles in Buildings 101, 102, and 103;

2. The potential presence of hydrocarbons or solvents in the soil and groundwater associated with vehicle repair outside Building 102;
3. The potential presence of PCB in the Wagner transformer outside Building 102;
4. The potential presence of minor leaks from the underground fuel lines due to construction by Lockheed.
5. The potential presence of fuel hydrocarbons in the soil associated with the staining south of Building 202;
6. The potential presence of fuel hydrocarbons in the soil and groundwater associated with leaking oil from the air compressor on the south side of Building 203;
7. The potential presence of man-made sanding grit, paint, and heavy metals in paint, and paint solvents in the soil in the Sandblasting Area;
8. The potential presence of fuel hydrocarbons or solvents in the soil and groundwater associated with the Hazardous Waste Storage Area;
9. The potential presence of fuel hydrocarbons in the soil associated with the storage and repair of cranes in the vicinity of Platen 5; and
10. The potential presence of heavy metals or fuel hydrocarbons in the marine sediments due to past or present operations;

#### PHASE II BASELINE SAMPLING PROGRAM

During the week of July 25, 1988 eight wells were drilled, constructed and sampled, and floor tile, ceiling tile, soil, marine sediments, and water samples were collected at the Lockheed Savannah facility to evaluate the concerns outlined above. Additional sampling took place during the weeks of August 1, and August 8 to verify previous water and soils quality data. This section presents the results of the sampling. Figure 2 depicts the various sample location and types. Table 1 summarizes sampling and analysis data. Well drilling and soil sampling were completed using the procedures listed in Appendix A. Well logs and lithologic descriptions are listed in Appendix B. Soil quality laboratory results are listed in Appendix C. Water quality laboratory results are listed in Appendix D.

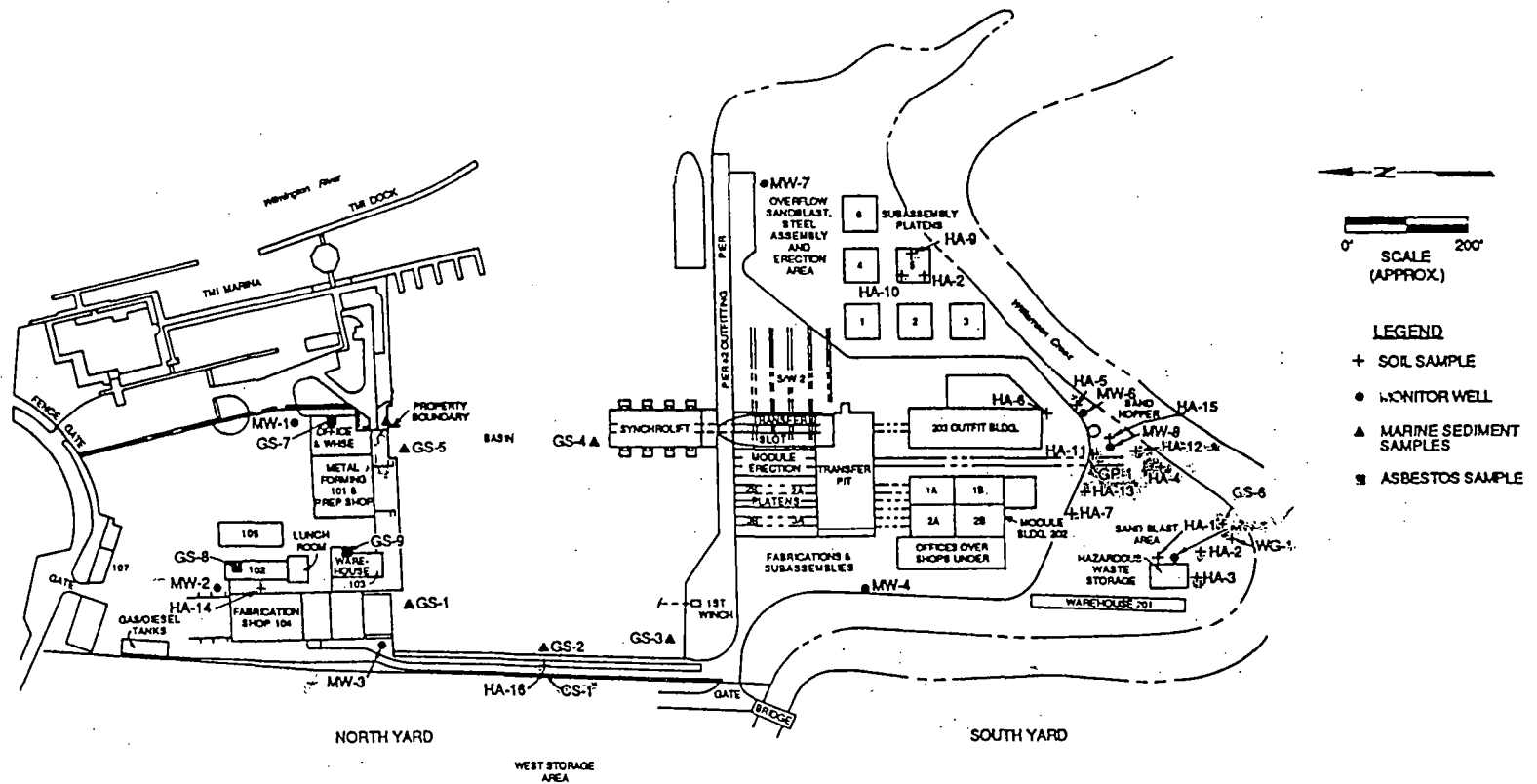


TABLE 1  
SAMPLE LOCATION, DESCRIPTIONS AND TYPE OF ANALYSES

Location	Depths (feet)	TYPE OF SAMPLE ANALYSIS PERFORMED					Comments
		8010	8020	Metal	601 602	608	
HA1 <sup>a</sup>	3.0-3.2		1 <sup>b</sup>				Hazardous Waste Storage. Diesel storage area.
HA2	3.0-3.2	1					Hazardous Waste Storage. MEK drums.
HA3	1.8-2.0		1				Hazardous Waste Storage. Containment Area drain.
HA4	0.5-1.0	1	1				Sand Blast Area, directly under sand.
HA5	0.5-1.0	1	1				At edge of asphalt by paint storage.
HA6	0.25-0.5		1				Air Compressor Area, south of Building 203.
HA7	3.0-3.2		1				By puddle, drainage from Building 202 and Hazardous waste area.
HA8	0.4-0.5		1				At edge of dark stain, Crane parking.
HA9	0.4-0.5		1				At edge of dark stain, Crane parking.
HA10	0.4-0.5		1				At edge of dark stain, Crane parking.
HA11	2.5-3.0	1	1				By containment sump. South of Building 203.

<sup>a</sup> HA1 is hand auger boring 1.

<sup>b</sup> Numers describe the type of sample collected and in the case of wells the number of times sampled.

TABLE 1  
SAMPLE LOCATION, DESCRIPTIONS AND TYPE OF ANALYSES  
(Continued)

Location	Depths (feet)	SAMPLE ANALYSIS				Comments	
		8010	8020	Metal	601 602		608
HA12	0.5-1.0	1	1				Sand Blast Area. Overland drainage to creek. Paint and associated debris.
HA13	0.5-1.0	1	1				Building 202 drainage.
	2.5-3.0	1	1				
HA14	0.5-1.0	1	1				Directly under asphalt. Car repair area at Building 102.
	2.5-3.0	1	1				
HA15	0.5-1.0		1				Grit storage near Sand Hopper.
HA16	1.0-1.3	1	1				Behind causeway wall sandblasting grit used for fill.
GS1 <sup>c</sup>		1	1	1			Grab Sample, Marine Sediments.
GS2		1	1	1			Grab Sample, Marine Sediments.
GS3		1	1	1			Grab Sample, Marine Sediments.
GS4		1	1	1			Grab Sample, Marine Sediments.
GS5		1	1	1			Grab Sample, Marine Sediments.
GS6		1	1				Beneath sandblast grit storage pile near Hazardous Waste Storage.
GS7							Asbestos sample of floor tile Building 101.

<sup>c</sup> GS1 is Grab sample number 1.

TABLE 1  
SAMPLE LOCATION, DESCRIPTIONS AND TYPE OF ANALYSES  
(Continued)

Location	Depths (feet)	SAMPLE ANALYSIS			601	608	Comments
		8010	8020	Metal	602		
GS8							Asbestos sample of floor tile Building 102.
GS9							Asbestos sample of floor tile Building 103.
GS10							Asbestos ceiling tile Building 101.
GS11						1	Transformer oil.
SB3 <sup>d</sup>	0.5-1.0	1	1				Next to causeway. By drainage pipe and fuel lines. Directly above water table. Converted to MW-3.
	2.5-3.0	1	1				
MW-1	Water				2		Near Building 101.
MW-2	Water				2		Near Building 102.
MW-3	Water				2		Near Building 104 and Basin.
MW-4	Water				2		West of Building 202.
MW-5	Water				2		Near hazardous waste storage.
MW-6	Water				2		Near paint storage south of Building 203.
MW-7	Water				2		South of Pier #1.
MW-8	Water				4		In sandblasting area.
WG-1 <sup>e</sup>				1			Waste sandblasting grit pile at Hazardous Waste Area.
GP-1 <sup>f</sup>				1			Waste sandblasting grit near well MW-8.
CS-1 <sup>g</sup>				1			Behind causeway wall at HA-16 waste grit used for fill.

<sup>e</sup> WG-1 is Waste Grit pile.

<sup>f</sup> GP-1 is Grit pile.

<sup>g</sup> CS-1 is Causeway Grit pile.

## Asbestos

A ceiling tile from Building 101 and floor tiles from Buildings 101, 102, and 103 were collected to determine if they contained asbestos. Samples were submitted to Forensic Analytical Specialties for analysis. No asbestos was detected above the method detection limit of one percent in the ceiling tile from Building 101 or the floor tiles from Buildings 102 and 103. The floor tile from Building 101 was shown to contain between one and five percent asbestos. Although the asbestos detected in the Building 101 floor tile poses no health risk in its present form, if it is to be removed, such removal should be performed by a certified asbestos contractor. Asbestos results are listed in Table 2 along with soil quality data for volatile compounds.

## Vehicle Repair Area

To determine whether chemical migration has occurred in soil and groundwater in the vicinity of the vehicle repair area west of Building 102, a shallow groundwater monitoring well and a hand auger boring were constructed. The monitor well (MW-2) was drilled to a total depth of 15 feet and a four-inch well was completed inside the augers. Water samples collected on July 28, 1988 and August 12, 1988 were analyzed using EPA Methods 601 and 602 and detected no chemicals of concern above reporting limits. Water quality data are summarized in Table 3. Table 4 is a summary of drinking water standards. These results were verified with additional sampling during a supplemental site visit the week of August 8, 1988. To address chemical occurrence in near surface soils, a hand auger boring (HA-14) was drilled to 3 feet and soil samples were collected at 0.5 feet and 2.5 feet below ground surface and analyzed using EPA Methods 8010 and 8020. Only trichlorofluoromethane at 0.03 ppm was detected. The EPA chemical concentration established for the protection of marine water for trichlorofluoromethane is 6400 ppm.

## Wagner Transformer

Cooling oils in transformers have been known to contain up to 10 percent PCB contamination. Pole mounted transformers are not usually cooled with PCBs, but contamination of transformer oils has occurred because service equipment used on PCB cooled capacitors is the same as that used to service transformers. Due to the potential for PCB contamination of the transformer oil, a sample was collected from the transformer on July 24, 1988. There were no detected PCB's above the detection limit of 5 ppm.

## Underground Fuel Lines

Construction operations such as trenching and foundation excavation may have effected underground fuel lines owned and operated by Thunderbolt Marine, Inc. The fuel lines make an underground traverse to the east and

TABLE 2

SOIL QUALITY  
SUMMARY OF ANALYTICAL RESULTS<sup>a</sup>

Location	Sample Date	Depth (feet)	Trichloro- fluoro- methane (ppm)	Ethyl- benzene (ppm)	Chemical Total Xylene (ppm)	Asbestos (percent)
HA-8 <i>Edge of bank stain 1 Orange parking</i>	7/22/88	0.4-0.5 <i>Subsidence of station 5 on base soil</i>	ND <sup>b</sup>	0.1	1.04	NA
HA-9 <i>Edge of the station Crane pk. g</i>	7/22/88	0.4-0.5	ND	ND	0.17	NA
HA-10 "	7/22/88		ND	0.1	0.93	NA
HA-13 <i>Bay 202 drawing? into storm drain inlet</i>	7/22/88	0.5-1.0	ND	0.2	1.5	NA
HA-14 <i>Bay 202 under platform Bay 102</i>	7/25/88	0.5-1.0	0.03	ND	ND	NA
HA-15 <i>Bay 202 under platform Bay 102</i>	7/27/88		ND	ND	0.09	NA
HA-16 <i>Bay 202 Behind Cauldron wall</i>	7/29/88	1.0-1.3	ND	ND	0.11	NA
GS-7 <i>Bay 202 Basin in area where sandblasting pit used for fuel</i>	7/29/88	NA	NA	NA	NA	1-5
GS-8	7/29/88	NA	NA	NA	NA	<1
GS-9	7/29/88	NA	NA	NA	NA	<1
GS-11	8/12/88	NA	NA	NA	NA	<1

<sup>a</sup> Only positive results above reporting limits are shown.<sup>b</sup> Not detected.

NA - not applicable

TABLE 3

WATER QUALITY  
SUMMARY OF ANALYTICAL RESULTS<sup>a</sup>  
(in ppb)

<u>Location</u>	<u>Sample Date</u>	<u>Trichloro-ethylene</u>	<u>Tetrachloro-ethylene</u>	<u>Benzene</u>	<u>Toluene</u>
MW-1 <i>New Bldg 101</i>	7/28/88	ND <sup>b</sup> <i>21-6</i>	0.5	ND	ND
	8/12/88	ND <i>5</i>	ND < .5	ND	ND
MW-4 <i>Library Bldg 202</i>	7/28/88	1	ND < .5	ND	ND
	8/4/88	ND	ND	ND	ND
	8/5/88	ND	ND	ND	ND
	8/12/88	ND	ND < .5	ND	ND
MW-8 <i>Sandblasting Area</i>	7/28/88	5	6.5	2	2
	8/4/88	ND	ND	0.9	ND
	8/5/88	ND	ND	1	ND
	8/11/88	ND	ND	1	ND

<sup>a</sup> Only positive results above reporting limits are shown.

<sup>b</sup> Not detected.

TABLE 4  
SUMMARY OF DRINKING WATER STANDARDS<sup>a</sup>

CHEMICAL <sup>b</sup>	EPA		MARINE STANDARDS
	<u>Primary</u>	<u>Recommended</u>	<u>EPA Designated Levels to Protect Marine Aquatic Life</u>
Trichloroethylene	5.0	0.00	2,000
Tetrachloro-ethylene	NL <sup>c</sup>	0.00	10,000
Benzene	5.0	0.00	5,100
Toluene	NL	2000	6,300

<sup>a</sup> Include only chemicals detected for groundwater quality samples collected.

<sup>b</sup> All values in parts per billion (ppb).

<sup>c</sup> Not listed.

A soil sample was collected just underneath the asphalt at an approximate depth of 0.25 to 0.5 feet below ground surface and was analyzed for hydrocarbons using EPA Method 8020. No chemicals were detected above the analytical reporting limit of 0.02 ppm.

#### Sandblasting Area

Painting operations taking place south of Building 203 were identified during the Phase I investigation. Materials of environmental interest include sand blasting material, paint, heavy metals in the paint, and paint solvents. To determine whether chemicals have impacted soil or groundwater, installation of monitor wells near the sand hopper and adjacent to the paint storage shed, and hand auger soil borings in the sand blasting, paint application area, and along the causeway where the sand blasting grit was used for fill were recommended. Water and soil samples were analyzed for solvents and hydrocarbons. In addition soil samples were collected of the used grit at the sand hopper and along the causeway and analyzed for heavy metals.

Two monitor wells were installed and groundwater quality samples collected. Monitor well MW-6 is located near the paint storage shed south of Building 203 and MW-8 in the sand blasting area to monitor shallow groundwater. No chemicals were detected in the two water quality samples collected at MW-6 on July 28, 1988 and August 12, 1988. Well MW-8 was sampled 4 times and detected 5 ppb trichloroethylene (TCE), 6.5 ppb tetrachloroethylene (PCE), 2 ppb benzene, and 2 ppb toluene for the July 28, 1988 sample. Primary Drinking Water Standards for the detected chemicals are 5 ppb TCE, 0 ppb PCE (recommended), 5 ppb benzene, and 2000 ppb toluene (recommended). Samples collected at MW-8 on August 4, 1988 detected 0.9 ppb benzene. Samples collected at MW-8 on August 5 and 11, 1988 detected 1.0 ppb benzene.

To assess chemical occurrence in near surface soils associated with painting operations, five hand auger soil borings (HA-4, HA-5, HA-11, HA-12 and HA-15) were drilled and selected soil samples analyzed. In general, soil samples were analyzed for the presence of solvents and hydrocarbons using EPA Methods 8010 and 8020. HA-4 was drilled in an area covered with Black Beauty sand blasting grit, HA-5 was drilled in a grassy area covered with trash and sand blasting grit covered the surface near the paint application area drain where HA-11 was drilled. No volatile chemicals were detected at these three locations. HA-12 was located east of the sand hopper adjacent to the sand blast area and no hydrocarbons were detected and only a trace solvent (trichlorofluoromethane at 0.02 ppm) was detected. HA-15 was also in the sand blasting area and even though strong organic odors were noted in the samplers log, the analysis indicated no solvents present and only xylene at 0.09 ppm.

In addition, three hand auger borings (WG-1, GP-1, and CS-1) were completed in the sandblast waste grit at 0.5 and 1.0 feet to determine if heavy metals were present in excess of soil quality guidelines set to protect marine waters.

Unlike solvents and hydrocarbons, metals occur naturally at low concentrations in the soil at the Lockheed Savannah site. Twelve metals were detected in the soil at three boring locations. Five metals had concentrations in excess of the EPA's designated level to protect marine water; they are chromium, copper, lead, nickel, and zinc. The EPA designated levels to protect marine water are listed in Table 5 along with notation on the boring and depth where metals were in excess of the designated levels. Table 6 is a summary of metals soil quality data.

In summary the VOC and VAC chemicals detected in the sandblasting area included trichloroethylene, tetrachloroethylene, trichlorofluoromethane, benzene, toluene, and total xylene. None were consistently detected above Primary Drinking Water Standards or designated level to protect marine aquatic life. Soil quality results for samples at WG-1, GP-1, and CS-1 detected chromium copper, lead, nickel, and zinc in excess of the designated levels to protect marine waters. However, it appears that removal of the piles and improved waste grit handling procedures would remedy this problem.

#### Hazardous Waste Storage Area

Chemical storage and handling in the hazardous waste storage area located in the south yard was identified during the Phase I investigation as a potential source of chemicals to groundwater and soils. Monitor Well (MW-5) was located adjacent to the east side of the hazardous waste storage area to determine whether storage and/or handling of hazardous wastes have impacted soil or groundwater. Water quality samples were collected on July 28, 1988 and August 11, 1988 and analyzed for solvents and hydrocarbons using EPA Methods 601 and 602, respectively. No chemicals were detected above the reporting limits.

Soil samples were collected at three hand auger soil boring and one grab sample location within the hazardous waste storage area. HA-1 and HA-2 were drilled into bare soil in an area associated with gasoline, diesel, waste solvent, and waste oil storage. HA-3 was drilled next to the containment area drain. A grab sample (GS-6) consisting of surface soil was also collected. Soil samples were analyzed for solvents and hydrocarbons using EPA Methods 8010 and 8020. No chemicals were detected above reporting limits.

#### Crane Parking and Repair Area

Hydraulic oil and diesel leaking from heavy machinery stored in the eastern section of the South Yard were identified during the Phase I investigation. Three hand auger soil borings (HA-8, HA-9, and HA-10) were drilled at subassembly platen 5 on bare soil in a triangular pattern to

TABLE 5  
DESIGNATED METAL LEVELS IN SOIL  
TO PROTECT MARINE WATERS

<u>Chemical</u>	<u>Designated Level (ppm)</u>	<u>Borings where Designated Level was Exceeded</u>
Antimony	NL	None
Arsenic	80	None
Barium	NL	None
Beryllium	NL	None
Cadmium	30	None
Chromium	20	WG-1, GP-1, CS-1 at 0.5 and 1.0 feet
Cobalt	NL	None
Copper	290	WG-1, GP-1, CS-1 at 0.5 and 1.0 feet
Lead	56	WG-1, GP-1, CS-1 at 0.5 and 1.0 feet
Mercury	<del>1</del> 25	None
Molybdenum	NL	None
Nickel	83	WG-1 and CS-1 at 1.0 feet CS-1 at 0.5 feet
Selenium	540	None
Thallium	NL	None
Vanadium	NL	None
Zinc	2000	WG-1 and CS-1 at 0.5 feet GP-1 and CS-1 at 1.0 feet

NL - Not Listed

TABLE 6

MARINE SEDIMENT AND BACKGROUND SOILS QUALITY  
SUMMARY OF ANALYTICAL RESULTS<sup>a</sup>

*Long Sea Wall vs Basin*

*Marine Sediment*

*Behind Causeway  
Wall 0.4/1.6  
Waste pit used  
for fill*

*Waste sandblasting  
grit pile  
at Hongkong  
Area*

*Waste sandblasting  
grit near wall*

Metals	GS-1	GS-2	GS-3	GS-4	GS-5	CS-1		WG-1		GP-1	
	0.5'	0.5'	0.5'	0.5'	0.5'	0.5'	1.0'	0.5'	1.0'	0.5'	1.0'
Depth	(7/22/88)	(7/25/88)	(7/26/88)	(7/26/88)	(7/26/88)	(8/11/88)	(8/11/88)	(8/11/88)	(8/11/88)	(8/11/88)	(8/11/88)
Date											
Antimony	ND <sup>b</sup>	5	ND	ND	ND	6	ND	ND	ND	ND	ND
Arsenic	7.5	1	0.9	0.9	1	ND	ND	ND	ND	ND	ND
Barium	ND	ND	ND	ND	ND	100	90	80	70	90	80
Beryllium	0.5	ND	ND	ND	ND	5	2	0.9	0.9	0.9	2
Cadmium	ND	ND	ND	ND	ND	0.9	0.8	0.6	0.7	0.5	0.7
Chromium	14	21	14	14	19	71	49	26	24	21	36
Cobalt	2	6	2	2	2	28	19	6	6	5	17
Copper	10	71	7	8	12	2800	1700	730	670	410	960
Lead	10	51	10	10	20	1500	990	230	220	150	640
Mercury	ND	0.24	ND	ND	ND	0.08	0.1	0.1	0.08	0.05	0.05
Molybdenum	ND	ND	ND	ND	ND	60	40	ND	ND	ND	20
Nickel	5	10	4	4	4	440	280	50	62	27	76
Selenium	0.1	ND	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Thallium	20	20	20	20	20	ND	ND	ND	ND	ND	ND
Vanadium	20	10	10	10	20	9	9	7	5	7	10
Zinc	28	240	21	25	35	2900	2200	2100	1500	1600	2100

<sup>a</sup> Only positive results above reporting limits are shown.<sup>b</sup> Not detected.

determine the lateral and vertical extent of hydrocarbons in soils within this area. Soil samples were collected near the surface and analyzed for hydrocarbons using EPA Method 8020. Ethylbenzene was detected at HA-8 (0.1 ppm) and HA-10 (0.1 ppm) while total xylene was detected in all three borings at concentrations of 1.04 ppm, 0.17 ppm, and 0.93 ppm for HA-8, HA-9, and HA-10 respectively. No other chemicals were detected. The chemicals detected in the soil were at concentrations less than the EPA designated level to protect marine waters.

#### Marine Sediments

Tidal action around the basin resulting in migration of chemicals into basin marine sediments was identified during the Phase I investigation. Chemicals originating from sources north of the Lockheed facility and from Thunderbolt Marine may include solvents, hydrocarbons, and heavy metals. Five marine sediment grab samples (GS-1, GS-2, GS-3, GS-4, and GS-5) were collected along the seawall of the basin at two locations in the North Yard and three locations in the South Yard to determine whether chemicals have migrated into the basin marine sediments.

Water is about 20 feet deep in the basin. ~~A drill rig was used to collect marine sediment samples. This was accomplished by backing the drill rig up to the seawall and free-falling a soil sample catcher into the marine sediments and retrieving the sample "plug".~~ Sediment samples were analyzed for solvents, hydrocarbons, and heavy metals.

No solvents or hydrocarbons were detected above analytical reporting limits in any of the marine sediment samples. As was stated above, heavy metals are naturally occurring chemicals. At GS-2, on the basin's west side, chromium was detected above the designated level to protect marine waters. Chromium, with a designated hazard level of 20 ppm, was detected at a concentration of 21 ppm. Table 6 summarizes the heavy metals results for GS-1 through GS-5.

#### Background Sampling

Past chemical use and dredged material upon which the Lockheed facility is constructed were identified as potential chemical sources during the Phase I investigation. Four groundwater monitor wells were installed and sampled to establish background conditions at the facility. All were constructed using 4 inch PVC screen and blank pipe to monitor shallow groundwater. MW-1 and MW-3 were completed at 16 feet below grade and are located, respectively, north of Building 101 and west of Building 104 in the North Yard. MW-4 and MW-7 were completed at 13 feet below grade and are located west of the transfer pit and alongside Pier 1 in the South Yard.

Water quality samples were collected on July 28, 1988 and August 12, 1988 and were analyzed for solvents and hydrocarbons using EPA methods 601 and 602. No chemicals were detected above reporting limits for MW-3 and MW-7. Tetrachloroethylene was detected at 0.5 ppb (the reporting limit) for

the sample collected from MW-1 on July 28, 1988. Sampling on August 12, 1988 at MW-1 detected no chemicals. Trichloroethylene was detected in MW-4 at 1 ppb (reporting limit 0.6 ppb) on July 28, 1988. Sampling on August 4, 5, and 12, 1988 detected no chemicals.

#### Additional Hydrogeologic Investigations

In addition to soil quality and water quality investigations conducted at the individual wells, the depth to water and general mineral water quality were investigated. The general minerals in the water of the Lockheed Savannah site were investigated to determine if the groundwater is potable or brackish.

The depth to water was measured on August 11 and 12, 1988. The elevations of the wells were surveyed on July 28, 1988. Table 7 is a summary of the well construction details and water level data.

General mineral analyses were performed on groundwater samples collected on August 4 and 5, 1988 from MW-8. Samples were analyzed for the following constituents:

- . Alkalinity,
- . Chloride,
- . Sulfate,
- . pH,
- . Specific Conductance
- . Surfactants, and
- . Total Dissolved Solids

Chloride and total dissolved solids (TDS) are the two constituents that are of primary importance in determining if water is potable. The EPA primary drinking water standard for chloride is 250 ppm and 500 ppm for TDS. The chloride concentration at MW-8 was reported at 400 ppm for the August 4, 1988 sample and 2450 for the August 5, 1988 sample. The TDS at MW-8 was reported at 1330 ppm for the August 4, 1988 sample and 4850 ppm for the August 5, 1988 sample. The chloride and TDS data indicate that the groundwater exceeds the EPA drinking water criteria and that the water is brackish. Brackish water is not suitable for domestic or municipal use. In addition most industrial applications would preclude use of water with the mineral concentrations detected at MW-8. Therefore the groundwater beneath the Lockheed site is of limited beneficial use for domestic, municipal, and industrial water users.

#### SUMMARY

The Lockheed Savannah facility, as was stated earlier, is relatively clean considering the type and size of construction operation. However the use, storage, handling, and disposal practices for hazardous wastes and equipment maintenance procedures could be improved somewhat. Hazardous wastes were stored on soil outside of the designated Hazardous

Storage Area, crane and truck maintenance was conducted on bare soil or in an area that drained onto soil, and oil leakage from air compressors did not appear to be cleaned up on a frequent basis. An assessment and sampling program was conducted to investigate the environmental concerns resulting from irregular housekeeping and maintenance practices. Results of the investigation resolved the environmental concerns. Asbestos, soil, groundwater, and marine sediment sampling program conducted in July and August 1988 indicate that Lockheed's operations at the site over the past three years have had little environmental impact with the exception of one area. The waste sandblasting grit was sampled and had elevated concentrations of the heavy metals chromium, copper, lead, nickel, and zinc. The waste grit is presently stockpiled on bare soil. The waste grit should be properly disposed of according to State of Georgia regulations. Sandblasting operations in the future should be conducted such that the waste grit is confined to a specific work area and is cleaned up and disposed of on a regular basis. For example, after removal of the existing grit, the sandblasting area could be paved, the waste grit collected using a front end loader, and it could be stored in commercially available bins. The waste grit could be stored on site for up to 90 days then disposed of at an appropriate Class I disposal site.

The only other environmental concern noted was the presence of asbestos in the floor tiles of Building 101. Considering the building is used solely for warehousing and the percentage of asbestos was reported to be 1 to 5 percent, the floor tile does not appear to represent a significant health threat. However, it is recommended that the floor tiles be removed by a certified asbestos removal contractor. The floor could then be left as a bare concrete slab to match the flooring in the rest of the building.

TABLE 7

## SUMMARY OF WELL CONSTRUCTION AND WATER LEVEL DATA

<u>Monitor Well</u>	<u>Total Depth (feet)</u>	<u>Screened Interval (feet below groundsurface)</u>	<u>Top of Casing Elevation (feet, msl)</u>	<u>Groundwater Depth Below TOC (feet)</u>	<u>Groundwater Elevation (feet, msl)</u>
01	17'	6-16	10.0	7.79 <sup>a</sup>	2.21
02	15'	3-13	10.97	7.13 <sup>b</sup>	3.84
03	17'	6-16'	11.45	6.96 <sup>b</sup>	4.49
04	15'	3-13'	6.84	5.37 <sup>a</sup>	1.47
05	14'	3-13'	6.42	2.88 <sup>b</sup>	3.54
06	14'	3-13'	7.06	5.46 <sup>a</sup>	1.60
07	14'	3-13'	8.25	3.13 <sup>a</sup>	5.12
08	14'	3-13'	7.07	4.75 <sup>a</sup>	2.32

<sup>a</sup> Sounded on 8/12/88

<sup>b</sup> Sounded on 8/11/88

<b>PROJECT NOTE</b>	
Date: August 20, 2001	Project Number: 4T-01-10-A-006
Name: Franki J. Jewell Title: Environmental Scientist Signature: <i>Franki J. Jewell</i> 8/20/01	
Subject: Thunderbolt Marine Inc. comments to site history and operations information presented in the Latex Construction Company Site-Specific Sampling Plan (SSSP) dated September 15, 2000.	
<p align="center"><b>PROJECT NOTE SUMMARY</b></p> <p>During the Expanded Site Inspection (ESI) sampling investigation conducted March 30 and April 2 - 4, 2001, Mr. T.L. Brooks reviewed the SSSP and noted that there were errors in the Site Operations section. I spoke with Mr. Charlie Simmons on August 7, 2001 and asked him if Mr. Brooks would like to make any changes or comments to the site history presented in the SSSP. After receiving verbal approval on August 8 from Mr. Charles L. King, U.S. EPA, Region 4, Remedial Project Manager, I sent a copy of the draft ESI Site Operations and Regulatory History section to Mr. Simmons via electronic mail. Attorneys representing Thunderbolt Marine Inc. marked the errors and Mr. Brooks' comments on a copy of the Site Operations and Regulatory History section from the draft ESI report and returned the annotated copy to me to incorporate into the report. The annotated copy of the Site Operations and Regulatory History section and a record of communications are attached.</p> <p>Charlie Simmons and Vance Hughes, with Kilpatrick Stockton, can be reached at (202) 508-5830.</p> <p>Mr. T.L. Brooks, with Thunderbolt Marine Inc., can be reached at (912) 352-4931.</p>	
<p align="center"><b>RESPONSE REQUIRED</b></p> <p>( ) None ( ) Phone call ( ) Memo ( ) Letter ( ) Report (✓) Attachments</p>	
cc: File (✓) Project Manager ( ) Principal Investigator ( ) Other (specify) ( )	

**Jewell, Franki**

**From:** Jewell, Franki  
**Sent:** Tuesday, August 07, 2001 3:18 PM  
**To:** 'King.CharlesL@epamail.epa.gov'  
**Subject:** draft Site Operations and Regulatory History Section of Latex ESI

Hi Charles, Charlie Simmons, one of the Thunderbolt Marine Inc. attorneys wanted to know if we could send him an electronic portion of the history section so that he could add the editorial comments and changes that he and Mr. Brooks had to the electronic copy and send it back to me. He said that would take less time than him retyping or re-writing them by hand. I told him I would need your approval before doing so. I have attached a file containing only the Site Operations and Regulatory History section, and included only site history info. for your approval. I also included a description of the references cited and added a draft watermark. This is what we would send him, via electronic mail, for him to add their comments to and then return to me. Let me know if this is acceptable to EPA. Thanks!

Franki



SiteHistorySection.  
wpd

*On August 8th, at 8:46 am,  
Charles King left verbal approval to send the history  
section to Mr. Simmons, on my voice mail.  
Franki L. Jewell 8/8/01*

**Jewell, Franki**

**From:** Jewell, Franki  
**Sent:** Wednesday, August 08, 2001 9:15 AM  
**To:** 'C.Simmons@KilpatrickStockton.com'  
**Cc:** 'King.CharlesL@epamail.epa.gov'; Moisan, Paul  
**Subject:** draft site history section for you to make corrections and apply comments

Mr. Simmons,

Attached please find the history section, in word perfect format, that we discussed during our telephone conversation on August 7, 2001. I have corrected some of the history information that was presented in the Site-Specific Sampling Plan after reviewing site-specific file material and these changes have been incorporated into this section that I am sending you. Please note the corrections and comments that Mr. Brooks of Thunderbolt Marine Inc. on the site history and return the annotated copy to me via electronic mail or fax. I will prepare a project note stating that we received the corrected history information from Thunderbolt Marine Inc. and attach it to the returned annotated copy to be used as a reference documenting the corrected site history information. If you have any questions, please contact me at (678) 775-3089. Thank you for your time and assistance.



SiteHistorySection.  
wpd

Sincerely,

Franki J. Jewell,  
Environmental Scientist

**Tetra Tech EM Inc.**  
Northmont Business Park  
1955 Evergreen Blvd., Suite 300  
Duluth, GA 30096

(678) 775-3089  
(678) 775-3138 (Fax)

**Jewell, Franki**

**From:** Simmons, Charlie [CSimmons@KilpatrickStockton.com]  
**Sent:** Tuesday, August 14, 2001 7:00 PM  
**To:** 'Jewell, Franki - TetraTech'  
**Subject:** Thunderbolt Marine



Thunderbold Site History(v1).D...    Memo to Frankie Jewel re Thund...

Franki:

The attached files are a memorandum regarding the Site-Specific Sampling Plan and a markup of the Site History. The comments and corrections are based on information obtained from Mr. Tom Brooks and in our files. Please let us know if you have any questions or require further information. Thank you again for the opportunity to comment.

Charlie Simmons

<<Thunderbold Site History(v1).DOC>>  
    <<Memo to Frankie Jewel re  
Thunderbolt(v1).DOC>>

## 2.2 SITE OPERATIONS AND REGULATORY HISTORY

Complete site history has not been documented. In the 1950's the facility reportedly was developed on reclaimed marsh land between the Wilmington River and Williamson Creek. Prior to the 1950s the area along the Wilmington River was used by shrimp boats for docking (Ref. 9, p. 3). The marina and dock were in place in 1953 (Ref. 5, Vol. 1, p. 6, Vol. 2, p. 3). The south Yard was a low-lying marsh in 1963. The basin between the North Yard and South Yard existed but there were no seawalls to prevent erosion of the sediments along the edge of the basin. The basin was dredged, seawalls were installed and the South Yard reportedly was built up using dredged materials. The South Yard was constructed on driven pilings that were filled with dredge material. Because the basin was used for pumping bilge w~~Because bilge waste from shrimp boats, government vessels and private watercraft discharged to the Intercoastal Waterway could have influenced the basin,~~ the south yard may have been contaminated by the dredge sediments. About 50 to 60 percent of the yard was surfaced with asphalt prior to construction of the buildings (Refs. 5, Vol. 1, pp. 6, 7, Vol. 2, pp. 3, 4; 9, p. 3). [Comment: the basin was not used for pumping bilge waste; discharges from vessels using the ICW could have influenced the basin because of its hydraulic connection to the ICW.]

Thunderbolt Marine Inc. (TMI) reportedly constructed tug boats (U.S. government and privately owned), pleasure boats, fishing boats, and barges at the facility from 1963~~72~~ to 1986 (Ref. 9, p. 3). Boat hulls were sandblasted and repainted with paints which contained heavy metals (Ref. 10). Pleasure boats were displayed in the western part of Building 101 which was the first structure built in the North Yard. Several other buildings subsequently were constructed on the North and South Yards. TMI was incorporated as a wholly-owned subsidiary of Latex Construction Company in 1981. TMI subsequently spun off as a separate entity in 1986 (Refs. 9, pp. 2, 3; 11, p. 42). Lockheed Shipbuilding Company (Lockheed) leased the facility and all of the buildings in July 1986. Lockheed subsequently constructed building 105 in the north yard and the hazardous waste storage facility in 1987 (Refs. 9, pp. 2, 3; 11, p. 42).

Lockheed constructed Landing Craft Utility (LCU) at the facility for the U.S. Army. The construction process consisted of the following (Ref. 9, pp. 4, 5):

- cutting raw stock steel with plasma cutter;
- descaling and priming the rough cut steel;
- grinding the steel edges using pneumatic grinders;
- welding steel together with heli-arc, oxy-acetylene, and carbon dioxide-argon welders;
- sandblasting and second coat painting;
- installation of power plants and air conditioning units;
- assembly and installation of electric components;
- machining and installation of hydraulic lines;
- final assembly of the components into the LCU; and
- final paint application to interior and exterior of the LCU.

During Lockheed's use of the facility the following buildings and areas were used (Ref. 9, pp. 2, 5 - 12):

- 101 - Storage and small component fabrications
- 102 - Warehouse, lockers, machine repair
- 103 - Warehouse, offices, welding equipment maintenance
- 104 - Fabrication building

- 105 - Descaling and primer paint application

[Comment: The descaling and painting operations were only conducted in building 105 for a few weeks until subcontracted to another.]

- 107 - Human resources
- Aboveground fuel storage (no building number)
- Thunderbolt Marine, Inc.
- West Storage Area

[Comment: the West storage area was not a building; it was an open lot used for parking automobiles.]

- 201 - Warehouse storage
- 202 - Module building
- 203 - Outfitting building
- Sandblast area
- Hazardous waste storage area
- Subassembly platens 1 through 6
- Subassembly platens 1A, 1B, 2A, and 2B
- Pier No. 1
- Pier No. 2
- Basin

In 1988, Lockheed Shipbuilding was sold its government contract to Halter Marine, Inc. to Thunderbolt Shipbuilding, a division of Trinity Industries Marina (Ref. 12). Trinity Marine Group leased the facility from TMI and subleased assigned it to Halter Marine Group of Dallas, Texas (Ref. 13). In 1990, Trinity Marine Group was in the process of terminating its operations at the facility (Ref. 14, pp. 1, 2) and moving partially completed vessels to its Gulf Coast facilities. Currently, the facility is operating leased under the name of Palmer Johnson Company Savannah, Inc. The Palmer Johnson Company Savannah, Inc. repairs and refurbishes luxury yachts (Ref. 3).

Trinity Marine Group reconditioned and manufactured marine vessels of essentially the same type as Lockheed. Three processes associated with Trinity Marine Group included: dry docking and launching, transfer, and repair and shipbuilding. The dry docking and launching processes entailed bringing marine vessels on-shore for repair and returning the reconditioned or manufactured marine vessels to the water. The transfer process involved the movement of marine vessels from one location to another once they are on shore. The repair and shipbuilding processes involved the initial cleaning, sandblasting, painting, engine repair, and total ship reconditioning. Wastes generated from the various types of operations included waste alkaline corrosive liquid (D002 - D007), hazardous waste solid (D007), flammable liquid waste (F003 and F005), waste flammable liquid (F003), paint waste (D001), and sandblast grit (Ref. 14, p. 2).

Buildings 101, 102, 103, 104, 105, 107, two aboveground fuel storage tanks (a 20,000-gallon diesel tank and a 10,000-gallon unleaded gasoline tank), and a storage area for metal stock are located in the north yard (Ref. 9, pp. 2, 5 - 7). Rivers End Restaurant and the TMI marina are located on the east side of the north yard (Refs. 15; 16, p. 3). Fuel from the two aboveground fuel storage tanks is delivered to three aboveground fuel tanks near the TMI marina vial underground lines to dispense fuel to boats at the TMI marina (Ref. 9, pp. 5 - 7). [Comment: This fuel storage and delivery system has been replaced.]

Activities in the north yard include welding, cutting of metal stock, vehicle and equipment maintenance, cleaning of parts, descaling of raw steel with steel shot, priming of steel and painting in an automated spray booth. Welding is conducted in the Storage and Small Component Fabrication building (Building 101) with carbon dioxide-argon gas and oxygen. Small quantities of oil and grease were used in the north end of Building 102 for equipment maintenance. Lockheed changed the oil and conducted repairs on mobile cranes and other vehicles to the west of Building 102. In 1988, a Wagoner transformer was located next to building 102. Lockheed conducted welding equipment maintenance in Building 103 (Ref. 9, pp. 5 - 7).

Building 104 stored a plasma cutter and associated water holding tank in the fabrication Building (Building 104) where the bottom foresection of the LCU was constructed. Welding with argon-helium, oxy-acetylene, and heli-arc systems was also conducted in building 104. Descaling and Primer Paint Application was conducted in Building 105. Raw stock steel plates were descaled and painted with primer. The mill scale was removed by a wheelabrator that used small steel shot as an abrasive. Was shot was sucked into a bag house operation that removed the debris to 55-gallon drums outside building 105. The plates then moved into an automatic spray booth where the paint was applied. The over spray was captured on a filter media that was discarded in commercial trash bins. Volatile components of the paint were carried up to the top of the building to be discharged to the atmosphere. The paint booth discharge was covered by an air quality permit issued by the Georgia Department of Natural Resources Air Quality Control Section (Ref. 9, pp. 5 - 7).

The west storage yard is located west of the north yard and Sylvan Island Road. Lockheed stored equipment and old vehicles including pipe fittings, old tires for cranes, a fork lift, a Dodge truck, pier pilings, spools of wire rope, and four ship/truck containers with equipment (Ref. 9, pp. 7, 8). The West Storage area also was used by the TMI Dredging Company in 1989 (Refs. 5, p. 13; 17, pp. 4, 5). [Comment: we have no information on TMI Dredging Company]

The ship basin (basin) comprises 7 acres and is located in the center of the facility between the north and south yards. A synchrolift, which is used to remove the ships from the water, is located in the center of the south side of the basin (Refs. 9, p. 12; 16, p. 3). Lockheed used the basin to move ship components from Building 104 to the south yard and to dock completed LCUs. TMI used the basin to dock dredges ~~barges~~ and small tugs (Ref. 9, p. 12).

Buildings 201, 202, 203, the hazardous waste storage area, the sandblast area, subassembly platens 1 through 6, and the transfer pit are located in the south yard (Ref. 9, pp. 2, 8 - 11). The Module Building (Building 202) housed machine, pipe cutting, and electrical component shops; offices for management, production, and accounting; and a large open area for component construction. The machine shop contained three large lathes, a radial drill, a milling machine, and two drill presses that required cutting oil for operation. Overspray of the cutting oil was generally contained by recycling units on the machinery. Overspray not contained by the machinery ended up on the concrete floor and was periodically absorbed with dry sweep and disposed in commercial bins (Ref. 9, p. 8).

Pipe cutters, band saws, a computerized pipe bender, a small bead sandblasting unit, oxygen acetylene, carbon dioxide argon cylinders, and heli-arc welding equipment were located in the pipe cutting shop. The electrical shop contained small electrical components for the LCU. Oil and solvents were dispensed from pint cans in this area. An air-cooled transformer was located outside of the electrical shop. The large component construction area in the north part of Building 202 was used to store LCU power plant equipment and for small part painting (Ref. 9, p. 8). Lockheed used the Outfitting Building (Building 203) for storing furniture and components, and constructing and painting the LCU super structure (Ref. 9, p. 9).

The hazardous waste storage area was constructed by Lockheed in 1987 for storing both virgin product and waste product. The hazardous waste storage area contains two aboveground 10,000-gallon waste-oil tanks surrounded by a 3-foot high concrete berm and a 1,000-gallon unleaded gasoline tank and a 500-gallon diesel tank surrounded by a 0.5-foot high berm. Fluid contained within the 3-foot berm was periodically drained to the ground from the south side of the containment structure. Lockheed's waste oil was periodically recycled by Waste Oil Recovery Service of Jacksonville, Florida. Waste solvent was periodically collected by Ashland Chemical Company and shipped to a hazardous waste site under a hazardous waste manifest (Ref. 9, p. 10).

The sandblasting area is located south of Buildings 202 and 203 and was used for sandblasting and painting LCUs (Ref. 9, p. 9). Ships were brought to the sandblast area from the basin via a rail system. The ships were first placed on rolling cradles and lifted from the water on the syncrolift. The ship was then rolled to the transfer pit, where it could be moved to one of the shops or the sandblast area (Ref. 17, p. 8). A 20-foot diameter sand hopper supplied the sand used for sand blasting the metal and compressed air was supplied by two stand-alone mobile compressors. Lockheed used a man-made silica sand blasting product called Black Beauty prior to using a natural sand grit for sand blasting operations. Paint, paint equipment, and personal equipment for the painters was stored in sheds built on top of dredge fill located near the sandblast area (Refs. 9, p. 9; 17, p. 6).

Lockheed used Subassembly Platens 1 through 6 to conduct discreet operations and assemble vessels (Ref. 9, p. 11; 17). Platens 1 through 3 were used to construct the three decks of the superstructure for the LCU. Grinders and heli-arc welders using carbon dioxide argon, oxygen, and natural gas were used in these areas. Subassembly Platen 4 was used for construction of submarine missile repair modules. Subassembly Platen 5 was used to park and repair large cranes used for lifting components of the LCU. Subassembly Platen 6 was used for storage of large block and tackle equipment, ship anchor chains, and subcontractor supply trailers. Subassembly Platens 1A, 1B, 2A, and 2B were used for construction of the hull of the LCU. Grinders and welders were also used in this area. An old emergency fire pump shed, a natural gas tank with a compressor, an electric winch for pulling hull components out of Building 104, and a sewage lift station were also used in this area (Ref. 9, p. 11). Some sandblasting, painting and paint and drum storage also occurred in the subassembly platens (Ref. 9, p. 11; 17).

#### REFERENCES CITED

- 5 U.S. Environmental Protection Agency, Environmental Monitoring Systems Laboratory, Site Analysis, Latex Construction, Thunderbolt, Georgia, Volumes 1 and 2. June 1991.
- 9 1. McLaren Environmental Engineering, Property Transaction Environmental Assessment and Verification Sampling, Lockheed Shipbuilding, Savannah Division, September 7, 1988.
- 10 U.S. Environmental Protection Agency, Potential Hazardous Waste Site, Preliminary Assessment, Part 1 - Site Information and Assessment, EPA Form 2070-12 (7 - 81), completed by Gilda A. Knowles, Georgia Department of Natural Resources, Environmental Protection Division. February 19, 1986.

11. Tetra Tech EM Inc., START 4, Logbook No. documenting Latex Construction Company Expanded Site Inspection field investigation conducted March 27 and 30, 2001 and April 2 - 4, 2001.
12. 12. Geoffrey Carton, NUS Corporation, record of telephone conversation with Leon White, Safety and Security, and Dave Moore, Former Head, Thunderbolt Shipbuilding. Subject: Site operations subsequent to Lockheed Shipbuilding's lease of the Latex Construction Company property. December 14, 1988.
13. W. E. Honey, Thunderbolt Marine Inc., letter to Mario E. Villamarzo, Jr., Environmental Engineer, U.S. Environmental Protection Agency, Site Assessment Section. Subject: Latex Construction. August 21, 1989.
14. Georgia Department of Natural Resources, Trip Report, Lockheed Shipbuilding, Thunderbolt, Georgia, May 14, 1990.
15. David L. Brown, START project manager, Tetra Tech EM Inc., letter to Carolyn Thompson, Remedial Project Manager, U.S. Environmental Protection Agency. Subject: Property Access Information, Latex Construction Company. February 11, 2000.
16. McLaren Environmental Engineering, Property Transaction, Excavation, and Verification Sampling, Lockheed Shipbuilding, Savannah Division, February 16, 1989.
17. NUS Corporation, Logbook No. F4-1610, documenting Latex Construction Company Site Screening Inspection, Phase II field investigation conducted September 11 and 12, 1989.

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August 15, 2001

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### • Memorandum

**TO:** Franki Jewell - TetraTech  
**FROM:** Charles T. Simmons  
**COPIES:** Tom Brooks  
Vance Hughes  
**RE:** Draft Site-Specific Sampling Plan

You asked me whether additional information regarding the site history might be available for integration into TetraTech's *Expanded Site Inspection Site-Specific Sampling Plan (Revision 0)* for Latex Construction Company in Thunderbolt, Georgia. Mr. Tom Brooks provided the following corrections and additional information:

1. Section 2.1, first paragraph:

The 27-acre facility is owned by Thunderbolt Marine, Inc. (TMI), and is currently leased to Palmer Johnson Savannah, Inc. (Ref. 8).

2. Section 2.1 second paragraph:

When Latex purchased the property in 1965, the basin and dock were present. Beginning in 1973 and continuing until 1986, TMI, a subsidiary of Latex, repaired yachts, U.S. government and commercial vessels, and built barges, tugs and other U.S. government vessels at the facility. Hulls were sandblasted and repainted with antifouling paints that contained heavy metals. TMI constructed the south yard in a previously marshy area using driven pilings. The yard was then filled with materials dredged from the basin. Because the basin was exposed to bilgewater discharged from private, commercial and U.S. government vessels using the Intercoastal Waterway, the south yard may have been contaminated by the dredge sediments. Most of the site development occurred between 1970 and 1986 (Ref. 7).

3. Section 2.3 first paragraph:

The facility is located in the coastal lowlands topographic division of the Coastal Plain physiographic province of Georgia.

4. Section 2.4 first paragraph, beginning with second sentence:

Memorandum to Franki Jewell - TetraTech  
August 15, 2001  
Page 2

When Latex purchased the property in 1965, the basin and dock were present. Beginning in 1973 and continuing until 1986, TMI, a subsidiary of Latex, repaired boats, barges, and tugs owned by the U.S. government and owned privately.

Lockheed Shipbuilding Company (Lockheed) leased the facility beginning in 1986, adding a building in the north yard in 1986 and a hazardous waste building in the south yard in 1987. Lockheed constructed Landing Craft Utility (LCU) ships at this location for the U.S. Army. In December 1988, Lockheed sold the LCU contract to Halter Marine, Inc. (Halter), a wholly owned subsidiary of Trinity Industries, Inc. (Trinity). At this same time, Halter was assigned the lease to the property, which it held until June 30, 1991. In April, 1992, and continuing until the present, the property was leased to Palmer Johnson Savannah, Inc.

5. Section 2.4 fifth paragraph; the first full paragraph on page 8:

Comment: The basin is referred to as "the ship basin." This description may not fully capture the range of uses, which included U.S. government vessels, commercial vessels and pleasure craft, e.g., luxury yachts. It might be preferable to refer to the basin simply as "the basin."

6. Section 2.6 Previous Investigations, bottom of page 9:

Comment: With respect to the sediment sample obtained by UGAMES, the statement is made that "This sample did not represent true background conditions, as the river receives runoff from the road as well as sandblasting debris from bridge maintenance." In the absence of comparison to a number of samples taken from off-site locations, we are concerned that this sample expresses a conclusion that may not be true. It might be more accurate to say "This sample *may* not represent background conditions, as the river receives runoff from the road as well as sandblasting debris from bridge maintenance."

7. Section 2.6 Previous Investigations, add a paragraph at the end of page 10:

Please add the following summary of remedial activities:

During the process of lease termination, Sunbelt Industrial Services, Inc., was engaged by Trinity and Halter to remove contaminated materials from the site in February, 1991. Excavation, grading and soil removal were performed at areas of the site where visible sandblasting medium or petroleum stained soils were observed. At the conclusion of excavation, at least fifty 25-ton capacity tandem wheel dump trailer loads of soil and sandblasting medium were removed from the site (approximately 1,250 tons of material).

Memorandum to Franki Jewell - TetraTech  
August 15, 2001  
Page 3

Following conclusion of the excavation and grading, TMI installed a storm water drainage system at the site, restored the original grade and paved the unpaved areas of the yard.

9. Section 3.3 Soil Exposure Pathway, first paragraph on page 12:

Please correct the name of the company to read Palmer Johnson Savannah, Inc.

10. Groundwater Sampling, page 23:

The background municipal well groundwater sample will be collected upgradient of the facility.

**Jewell, Franki**

**From:** Simmons, Charlie [CSimmons@KilpatrickStockton.com]  
**Sent:** Friday, August 17, 2001 12:26 PM  
**To:** 'Jewell, Franki'  
**Subject:** RE: Thunderbolt Marine

Hello, Franki:

Here is the information you requested regarding the new fuel storage and delivery equipment at TMI:

1. The new fuel storage and delivery system was installed in late March and early April, 2001.
2. Two underground storage tanks were installed, 8' diameter each at 3.5 feet below grade. The tanks are anchored with a 12' x 12' concrete pillar ("dead man anchor").
3. Tanks are glass-steel UL 58 standard tanks. Fuel delivery line is coaxial double-wall manufactured by APT. There is a sump and sump-sensor located at the dock to detect line leakage and sound an alarm.
4. Tanks are equipped with a Veeder-Root TLS-300 tank monitor as marketed by Gilbarco under its "EMC Basic" brand. Functionality of the tank monitor includes nightly tank testing between 2 and 4 am; ability to detect 0.1 gallon per hour leak rate and water intrusion. A daily printout of the tank monitoring results is provided by the monitoring system.
5. Andy Thompson of Central Industries (912-236-5707) is the contractor who installed the tanks. Thompson said that excavation was 13 to 14 feet deep and no evidence of subsurface soil contamination was observed.
6. Palmer Johnson Savannah is in possession of the required tank permits issued by the Fire Marshal and Georgia DNR.

-----Original Message-----

**From:** Jewell, Franki [mailto:Franki.Jewell@ttemi.com]  
**Sent:** Wednesday, August 15, 2001 12:12 PM  
**To:** 'Simmons, Charlie'  
**Subject:** RE: Thunderbolt Marine

Thank You. I just have one question for which I need further clarification. Regarding your last comment on the 7<sup>th</sup> paragraph of the annotated 2.2 Site Operations and Regulatory History section (Paragraph begins "Buildings 101, 102, 103 .....") was "This fuel storage and delivery system has been replaced," referring to the "Fuel from the two aboveground fuel storage tanks is delivered to three aboveground fuel tanks near the TMI Marina via underground lines to dispense fuel to boats at the TMI Marina." What type of fuel storage and delivery system has replaced the previous system and when was this system replaced?

Thank you for your time and consideration.

Sincerely,

Franki J. Jewell,  
Environmental Scientist

Tetra Tech EM Inc.  
1955 Evergreen Blvd., Suite 300  
Duluth, GA 30096  
(678) 775-3080  
(678) 775-3138 (fax)

-----Original Message-----

**From:** Simmons, Charlie [mailto:CSimmons@KilpatrickStockton.com]

Sent: Tuesday, August 14, 2001 7:00 PM  
To: 'Jewell, Franki - TetraTech'  
Subject: Thunderbolt Marine

<< File: Thunderbold Site History(v1).DOC >> << File: Memo to Frankie Jewel re  
Thunderbolt(v1).DOC >> Franki:

The attached files are a memorandum regarding the Site-Specific Sampling Plan and a markup of the Site History. The comments and corrections are based on information obtained from Mr. Tom Brooks and in our files. Please let us know if you have any questions or require further information. Thank you again for the opportunity to comment.

Charlie Simmons

<<Thunderbold Site History(v1).DOC>>  
<<Memo to Frankie Jewel re  
Thunderbolt(v1).DOC>>

1955 Evergreen Boulevard, Building 200  
Suite 300  
Duluth, Georgia 30096  
(678) 775-3080 (p)  
(678) 775-3138 (f)

**Tetra Tech EM Inc.**

# Fax

To: Mr. Charlie Simmons From: J. Jewell  
Fax: (202) 508-5858 Pages: 7, including this page  
Phone: (202) 508-5830 Date: August 8, 2001  
Re: Lotex Construction Company Draft CC:  
Site History Section  
☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments:

Following is the requested information

The documents accompanying this telecopy transmission contain confidential, privileged, or proprietary information that either constitutes the property of Tetra Tech EM Inc., or if the property of another, represents information that is within Tetra Tech's care, custody, and control. The information is intended to be for the use of the individual or entity named on the transmission sheet. If you are not the intended recipient, be aware that any disclosure, copying, or the use of the contents of this telecopied information is prohibited.

If you have received this telecopy in error, please notify us by telephone immediately so that we can arrange for the retrieval of the original documents at no cost to you. Should there be difficulties with this transmission, call (678) 775-3080 for assistance. Thank you for your assistance.

## 2.2 SITE OPERATIONS AND REGULATORY HISTORY

Complete site history has not been <sup>Sully</sup> documented. In the 1950's the facility reportedly was developed on reclaimed marsh land between the Wilmington River and Williamson Creek. Prior to the 1950s the area along the Wilmington River was used by shrimp boats for docking (Ref. 9, p. 3). The marina and dock were in place in 1953 (Ref. 5, Vol. 1, p. 6, Vol. 2, p. 3). The south Yard was a low-lying marsh in 1963. The basin between the North Yard and South Yard existed but there were no seawalls to prevent erosion of the sediments along the edge of the basin. The basin was dredged, seawalls were installed and the South Yard reportedly was built up using dredged materials. The South Yard was constructed on driven pilings that were filled with dredge material. Because the basin was used for pumping bilge waste from shrimp boats, the south yard may have been contaminated by the dredge sediments. About 50 to 60 percent of the yard was surfaced with asphalt prior to construction of the buildings (Refs. 5, Vol. 1, pp. 6, 7, Vol. 2, pp. 3, 4; 9, p. 3).

Thunderbolt Marine Inc. (TMI) reportedly constructed pleasure boats, fishing boats, and barges at the facility from 1963 to 1986 (Ref. 9, p. 3). Boat hulls were sandblasted and repainted with paints which contained heavy metals (Ref. 10). Pleasure boats were displayed in the western part of Building 101 which was the first structure built in the North Yard. Several other buildings subsequently were constructed on the North and South Yards. TMI was incorporated as a wholly-owned subsidiary of Latex Construction Company in 1981. TMI subsequently spun off as a separate entity in 1986 (Refs. 9, pp. 2, 3; 11, p. 42). Lockheed Shipbuilding Company (Lockheed) leased the facility and all of the buildings in July 1986. Lockheed subsequently constructed building 105 in the north yard and the hazardous waste storage facility in 1987 (Refs. 9, pp. 2, 3; 11, p. 42).

Lockheed constructed Landing Craft Utility (LCU) at the facility for the U.S. Army. The construction process consisted of the following (Ref. 9, pp. 4, 5):

- cutting raw stock steel with plasma cutter;
- descaling and priming the rough cut steel;
- grinding the steel edges using pneumatic grinders;
- welding steel together with heli-arc, oxy-acetylene, and carbon dioxide-argon welders;
- sandblasting and second coat painting;
- installation of power plants and air conditioning units;
- assembly and installation of electric components;
- machining and installation of hydraulic lines;
- final assembly of the components into the LCU; and
- final paint application to interior and exterior of the LCU.

During Lockheed's use of the facility the following buildings and areas were used (Ref. 9, pp. 2, 5 - 12):

- 101 - Storage and small component fabrications
- 102 - Warehouse, lockers, machine repair
- 103 - Warehouse, offices, welding equipment maintenance
- 104 - Fabrication building
- 105 - Descaling and primer paint application
- 107 - Human resources
- Aboveground fuel storage (no building number)
- Thunderbolt Marine, Inc.
- West Storage Area

- 201 - Warehouse storage
- 202 - Module building
- 203 - Outfitting bulding
- Sandblast area
- Hazardous waste storage area
- Subassembly platens 1 through 6
- Subassembly platens 1A, 1B, 2A, and 2B
- Pier No. 1
- Pier No. 2
- Basin

In 1988, Lockheed Shipbuilding was sold to Thunderbolt Shipbuilding, a division of Trinity Marina (Ref. 12). Trinity Marine Group leased the facility from TMI and subleased it to Halter Marine Group of Dallas, Texas (Ref. 13). In 1990, Trinity Marine Group was in the process of terminating its operations at the facility (Ref. 14, pp. 1, 2). Currently, the facility is operating under the name of Palmer Johnson Company. The Palmer Johnson Company repairs and refurbishes luxury yachts (Ref. 3).

Trinity Marine Group reconditioned and manufactured marine vessels. Three processes associated with Trinity Marine Group included: dry docking and launching, transfer, and repair and shipbuilding. The dry docking and launching processes entailed bringing marine vessels on shore for repair and returning the reconditioned or manufactured marine vessels to the water. The transfer process involved the movement of marine vessels from one location to another once they are on shore. The repair and shipbuilding processes involved the initial cleaning, sandblasting, painting, engine repair, and total ship reconditioning. Wastes generated from the various types of operations included waste alkaline corrosive liquid (D002 - D007), hazardous waste solid (D007), flammable liquid waste (F003 and F005), waste flammable liquid (F003), paint waste (D001), and sandblast grit (Ref. 14, p. 2).

Buildings 101, 102, 103, 104, 105, 107, two aboveground fuel storage tanks (a 20,000-gallon diesel tank and a 10,000-gallon unleaded gasoline tank), and a storage area for metal stock are located in the north yard (Ref. 9, pp. 2, 5 - 7). Rivers End Restaurant and the TMI marina are located on the east side of the north yard (Refs. 15; 16, p. 3). Fuel from the two aboveground fuel storage tanks is delivered to three aboveground fuel tanks near the TMI marina vial underground lines to dispense fuel to boats at the TMI marina (Ref. 9, pp. 5 - 7).

Activities in the north yard include welding, cutting of metal stock, vehicle and equipment maintenance, cleaning of parts, descaling of raw steel with steel shot, priming of steel and painting in an automated spray booth. Welding is conducted in the Storage and Small Component Fabrication building (Building

101) with carbon dioxide-argon gas and oxygen. Small quantities of oil and grease were used in the north end of Building 102 for equipment maintenance. Lockheed changed the oil and conducted repairs on mobile cranes and other vehicles to the west of Building 102. In 1988, a Wagoner transformer was located next to building 102. Lockheed conducted welding equipment maintenance in Building 103 (Ref. 9, pp. 5 - 7).

Building 104 stored a plasma cutter and associated water holding tank in the fabrication Building (Building 104) where the bottom foresection of the LCU was constructed. Welding with argon-helium, oxy-acetylene, and heli-arc systems was also conducted in building 104. Descaling and Primer Paint Application was conducted in Building 105. Raw stock steel plates were descaled and painted with primer. The mill scale was removed by a wheelabrator that used small steel shot as an abrasive. Was shot was sucked into a bag house operation that removed the debris to 55-gallon drums outside building 105. The plates then moved into an automatic spray booth where the paint was applied. The over spray was captured on a filter media that was discarded in commercial trash bins. Volatile components of the paint were carried up to the top of the building to be discharged to the atmosphere. The paint booth discharge was covered by an air quality permit issued by the Georgia Department of Natural Resources Air Quality Control Section (Ref. 9, pp. 5 - 7).

The west storage yard is located west of the north yard and Sylvan Island Road. Lockheed stored equipment and old vehicles including pipe fittings, old tires for cranes, a fork lift, a Dodge truck, pier pilings, spools of wire rope, and four ship/truck containers with equipment (Ref. 9, pp. 7, 8). The West Storage area also was used by the TMI Dredging Company in 1989 (Refs. 5, p. 13; 17, pp. 4, 5).

The ship basin (basin) comprises 7 acres and is located in the center of the facility between the north and south yards. A synchrolift, which is used to remove the ships from the water, is located in the center of the south side of the basin (Refs. 9, p. 12; 16, p. 3). Lockheed used the basin to move ship components from Building 104 to the south yard and to dock completed LCUs. TMI used the basin to dock dredge barges (Ref. 9, p. 12).

Buildings 201, 202, 203, the hazardous waste storage area, the sandblast area, subassembly platens 1 through 6, and the transfer pit are located in the south yard (Ref. 9, pp. 2, 8 - 11). The Module Building (Building 202) housed machine, pipe cutting, and electrical component shops; offices for management, production, and accounting; and a large open area for component construction. The machine shop

contained three large lathes, a radial drill, a milling machine, and two drill presses that required cutting oil for operation. Overspray of the cutting oil was generally contained by recycling units on the machinery. Overspray not contained by the machinery ended up on the concrete floor and was periodically absorbed with dry sweep and disposed in commercial bins (Ref. 9, p. 8).

Pipe cutters, band saws, a computerized pipe bender, a small bead sandblasting unit, oxygen acetylene, carbon dioxide argon cylinders, and heli-arc welding equipment were located in the pipe cutting shop. The electrical shop contained small electrical components for the LCU. Oil and solvents were dispensed from pint cans in this area. An air-cooled transformer was located outside of the electrical shop. The large component construction area in the north part of Building 202 was used to store LCU power plant equipment and for small part painting (Ref. 9, p. 8). Lockheed used the Outfitting Building (Building 203) for storing furniture and components, and constructing and painting the LCU super structure (Ref. 9, p. 9).

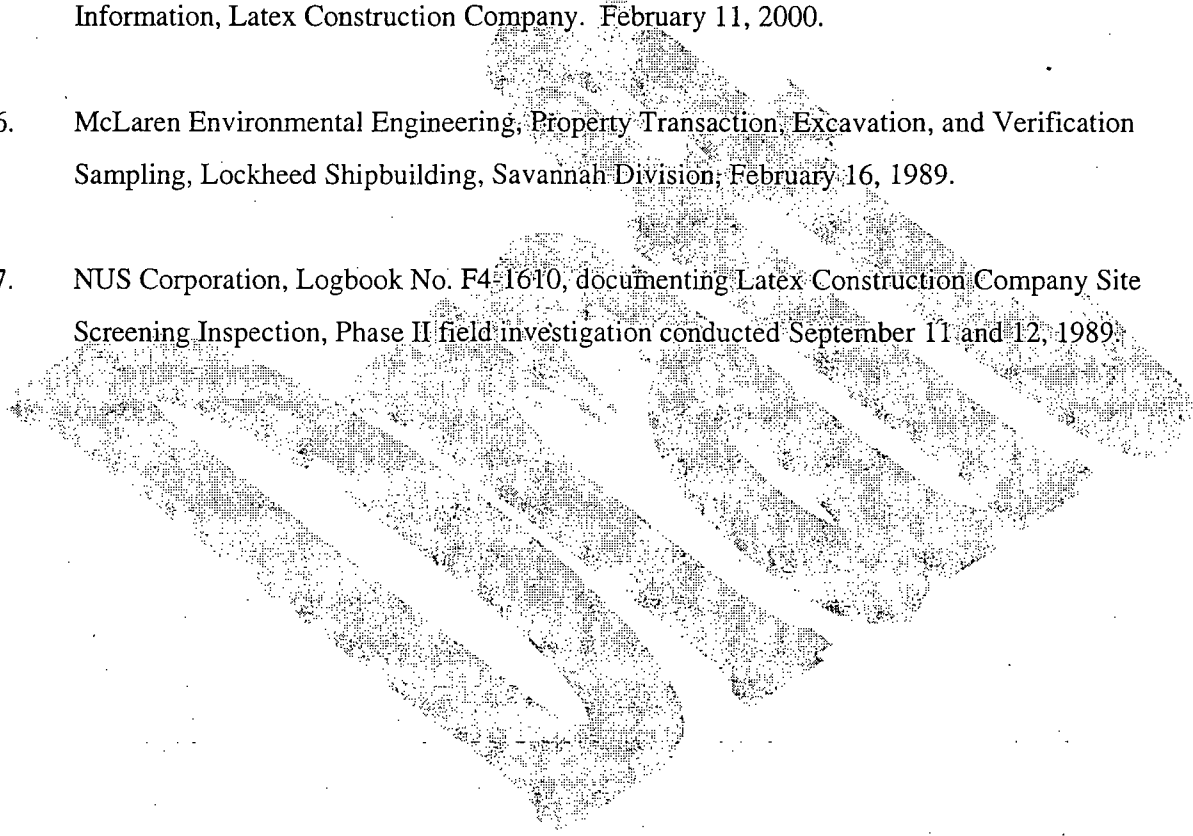
The hazardous waste storage area was constructed by Lockheed in 1987 for storing both virgin product and waste product. The hazardous waste storage area contains two aboveground 10,000-gallon waste-oil tanks surrounded by a 3-foot high concrete berm and a 1,000-gallon unleaded gasoline tank and a 500-gallon diesel tank surrounded by a 0.5-foot high berm. Fluid contained within the 3-foot berm was periodically drained to the ground from the south side of the containment structure. Lockheed's waste oil was periodically recycled by Waste Oil Recovery Service of Jacksonville, Florida. Waste solvent was periodically collected by Ashland Chemical Company and shipped to a hazardous waste site under a hazardous waste manifest (Ref. 9, p. 10).

The sandblasting area is located south of Buildings 202 and 203 and was used for sandblasting and painting LCUs (Ref. 9, p. 9). Ships were brought to the sandblast area from the basin via a rail system. The ships were first placed on rolling cradles and lifted from the water on the syncrolift. The ship was then rolled to the transfer pit, where it could be moved to one of the shops or the sandblast area (Ref. 17, p. 8). A 20-foot diameter sand hopper supplied the sand used for sand blasting the metal and compressed air was supplied by two stand-alone mobile compressors. Lockheed used a man-made silica sand blasting product called Black Beauty prior to using a natural sand grit for sand blasting operations. Paint, paint equipment, and personal equipment for the painters was stored in sheds built on top of dredge fill located near the sandblast area (Refs. 9, p. 9; 17, p. 6).

Lockheed used Subassembly Platens 1 through 6 to conduct discreet operations and assemble vessels (Ref. 9, p. 11; 17). Platens 1 through 3 were used to construct the three decks of the superstructure for the LCU. Grinders and heli-arc welders using carbon dioxide argon, oxygen, and natural gas were used in these areas. Subassembly Platen 4 was used for construction of submarine missile repair modules. Subassembly Platen 5 was used to park and repair large cranes used for lifting components of the LCU. Subassembly Platen 6 was used for storage of large block and tackle equipment, ship anchor chains, and subcontractor supply trailers. Subassembly Platens 1A, 1B, 2A, and 2B were used for construction of the hull of the LCU. Grinders and welders were also used in this area. An old emergency fire pump shed, a natural gas tank with a compressor, an electric winch for pulling hull components out of Building 104, and a sewage lift station were also used in this area (Ref. 9, p. 11). Some sandblasting, painting and paint and drum storage also occurred in the subassembly platens (Ref. 9, p. 11; 17).

#### REFERENCES CITED

5. U.S. Environmental Protection Agency, Environmental Monitoring Systems Laboratory, Site Analysis, Latex Construction, Thunderbolt, Georgia, Volumes 1 and 2. June 1991.
9. McLaren Environmental Engineering, Property Transaction Environmental Assessment and Verification Sampling, Lockheed Shipbuilding, Savannah Division, September 7, 1988.
10. U.S. Environmental Protection Agency, Potential Hazardous Waste Site, Preliminary Assessment, Part 1 - Site Information and Assessment, EPA Form 2070-12 (7 - 81), completed by Gilda A. Knowles, Georgia Department of Natural Resources, Environmental Protection Division. February 19, 1986.
11. Tetra Tech EM Inc., START 4, Logbook No. documenting Latex Construction Company Expanded Site Inspection field investigation conducted March 27 and 30, 2001 and April 2 - 4, 2001.
12. Geoffrey Carton, NUS Corporation, record of telephone conversation with Leon White, Safety and Security, and Dave Moore, Former Head, Thunderbolt Shipbuilding. Subject: Site operations subsequent to Lockheed Shipbuilding's lease of the Latex Construction Company property. December 14, 1988.

13. W. E. Honey, Thunderbolt Marine Inc., letter to Mario E. Villamarzo, Jr., Environmental Engineer, U.S. Environmental Protection Agency, Site Assessment Section. Subject: Latex Construction. August 21, 1989.
  14. Georgia Department of Natural Resources, Trip Report, Lockheed Shipbuilding, Thunderbolt, Georgia, May 14, 1990.
  15. David L. Brown, START project manager, Tetra Tech EM Inc., letter to Carolyn Thompson, Remedial Project Manager, U.S. Environmental Protection Agency. Subject: Property Access Information, Latex Construction Company. February 11, 2000.
  16. McLaren Environmental Engineering, Property Transaction, Excavation, and Verification Sampling, Lockheed Shipbuilding, Savannah Division; February 16, 1989.
  17. NUS Corporation, Logbook No. F4-1610, documenting Latex Construction Company Site Screening Inspection, Phase II field investigation conducted September 11 and 12, 1989.
- 

**Jewell, Franki**

**From:** Simmons, Charlie [CSimmons@KilpatrickStockton.com],  
**Sent:** Thursday, August 16, 2001 4:14 PM  
**To:** 'Jewell, Franki'  
**Subject:** RE: Thunderbolt-Marine

Hello, Franki:

I have a call in to Tom Brooks to obtain this information and expect to hear from him tomorrow.

Charlie

-----Original Message-----

**From:** Jewell, Franki [mailto:Franki.Jewell@ttemi.com]  
**Sent:** Wednesday, August 15, 2001 12:12 PM  
**To:** 'Simmons, Charlie'  
**Subject:** RE: Thunderbolt Marine

Thank You. I just have one question for which I need further clarification. Regarding your last comment on the 7<sup>th</sup> paragraph of the annotated 2.2 Site Operations and Regulatory History section (Paragraph begins "Buildings 101, 102, 103 .....") was "This fuel storage and delivery system has been replaced," referring to the "Fuel from the two aboveground fuel storage tanks is delivered to three aboveground fuel tanks near the TMI Marina via underground lines to dispense fuel to boats at the TMI Marina." What type of fuel storage and delivery system has replaced the previous system and when was this system replaced?

Thank you for your time and consideration.

Sincerely,

Franki J. Jewell,  
Environmental Scientist

Tetra Tech EM Inc.  
1955 Evergreen Blvd., Suite 300  
Duluth, GA 30096  
(678) 775-3080  
(678) 775-3138 (fax)

-----Original Message-----

**From:** Simmons, Charlie [mailto:CSimmons@KilpatrickStockton.com]  
**Sent:** Tuesday, August 14, 2001 7:00 PM  
**To:** 'Jewell, Franki - TetraTech'  
**Subject:** Thunderbolt Marine

<< File: Thunderbold Site History(v1).DOC >> << File: Memo to Frankie Jewel re  
Thunderbolt(v1).DOC >> Franki:

The attached files are a memorandum regarding the Site-Specific Sampling Plan and a markup of the Site History. The comments and corrections are based on information obtained from Mr. Tom Brooks and in our files. Please let us know if you have any questions or require further information. Thank you again for the opportunity to comment.

Charlie Simmons

PRELIMINARY ASSESSMENT COVER SHEET  
LATEX CONSTRUCTION CO.  
GAD980803696

I. HISTORY OF SITE

The Latex Construction Company is located at 3126 River Road in Thunderbolt, GA 31404. Information concerning ownership and years of operation is incomplete. The facility services and repairs small ships and crafts such as barges, tugs, etc. Hulls are sandblasted and painted with anti-fouling paints that contain heavy metals.

II. NATURE OF HAZARDOUS MATERIALS

There are no process wastewaters from this facility but it is possible that waste in the form of paint chippings and sandblasting residues may have entered nearby surface waters via washdown water or surface runoff.

III. DESCRIPTIONS OF HAZARDOUS CONDITIONS, INCIDENTS AND PERMIT VIOLATIONS

In March of 1983, the "Friends of the Wilmington River" (a citizens group), accused the Latex Construction Company of discharging heavy metals into Williamson Creek. Mr. Richard Reddy, a representative of the Friends of the Wilmington River, claims that sediment samples collected near the Latex Construction Site and analyzed at the Skidaway Oceanographic Institute contained elevated concentrations of heavy metals (copper, lead and zinc). The Georgia Marine Extension Service, at the request of Latex Construction Company, also sampled sediments in the alleged impact area. The concentrations of metals in the samples were within the ranges normally found in Savannah River Sediments.

IV. ROUTES FOR CONTAMINATION

Washdown water and surface runoff may carry wastes from the Latex Construction Company site into Williamson Creek.

V. POSSIBLE AFFECTED POPULATION AND RESOURCES

There is no evidence that the residents of Thunderbolt (population 2,165) are being affected by this site. However, there may be localized contamination of soil and sediments in the area and contamination of Williamson Creek.

VI. RECOMMENDATIONS AND JUSTIFICATIONS

This site is assessed a "Low" priority for a Site Inspection because existing information is contradictory and incomplete.

## VII. REFERENCES TO SUPPORTING DATA SOURCES

1. Letter, 2/22/83, RE: Dredging Permits
2. Lab Analysis, 2/22/83, RE: Heavy Metal Concentrations.
3. Letter, 3/7/83, RE: Sediment Samples.
4. Letter, 3/10/83, RE: Heavy Metal Concentrations.
5. Letter, 3/25/83, RE: Accusation REsponse & Laboratory Analysis.
6. Newspaper Article, 3/24/83, RE: Dredging Plan.
7. Letter, 3/29/83, RE: Alleged Pollution.
8. Letter, 3/23/83, RE: EPA and REpresentatives Meeting.
9. Letter, 3/10/83, RE: NPDES Permit.
10. Letter, 3/22/83, RE: Heavy Metals.
11. EPA Site Maintenance Form, 7/17/85.

GAK/mcw032



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

GA D980803696

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☒ K. DAMAGE TO FAUNA  
04 NARRATIVE DESCRIPTION (Include name(s) of species)

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

Heavy metals may be toxic to estuarine organisms.

01 ☒ L. CONTAMINATION OF FOOD CHAIN  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

Humans may eat heavy metal contaminated fish or shellfish.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES  
(Spills, runoff, standing liquids, leaking drums)

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPD State Files  
Latex Construction Co.; Thunderbolt, GA.



☐ I. HIGHLY VOLATILE  
☐ J. EXPLOSIVE  
☐ K. REACTIVE  
☐ L. INCOMPATIBLE  
☐ M. NOT APPLICABLE

## EPA FORM 2070-12 (7-81)



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

GA D980803696

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

01 ☒ B. SURFACE WATER CONTAMINATION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

Possible wastewater (heavy metals) discharge into Williamson Creek.

01 ☐ C. CONTAMINATION OF AIR

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

01 ☐ E. DIRECT CONTACT

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

01 ☐ F. CONTAMINATION OF SOIL

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 AREA POTENTIALLY AFFECTED: \_\_\_\_\_

(Acres)

04 NARRATIVE DESCRIPTION

01 ☐ G. DRINKING WATER CONTAMINATION

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

01 ☐ H. WORKER EXPOSURE/INJURY

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 WORKERS POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY

02 ☐ OBSERVED (DATE: \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
GA D980803696

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) <b>Latex Construction Company</b>		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER <b>3126 River Road</b>			
03 CITY <b>Thunderbolt</b>	04 STATE <b>GA</b>	05 ZIP CODE <b>31404</b>	06 COUNTY <b>Chatham</b>	07 COUNTY CODE <b>051</b>	08 CONG DIST <b>01</b>
09 COORDINATES LATITUDE <b>32° 02' 54.0"</b>		LONGITUDE <b>081° 03' 54.0"</b>			

10 DIRECTIONS TO SITE (Starting from nearest public road)

From the intersection of Hwy. 80 & 26 and River Rd., proceed south on River Rd. for 0.75 miles. Facility is on the right (west).

III. RESPONSIBLE PARTIES

01 OWNER (If known) <b>Unknown</b>		02 STREET (Business, mailing, residential)			
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER ( )		
07 OPERATOR (If known and different from owner) <b>Unknown</b>		08 STREET (Business, mailing, residential)			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER ( )		
13 TYPE OF OWNERSHIP (Check one) <input type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL: (Agency name) <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER: (Specify) <input checked="" type="checkbox"/> G. UNKNOWN					

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: / / MONTH DAY YEAR ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: / / MONTH DAY YEAR ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES DATE / / MONTH DAY YEAR <input checked="" type="checkbox"/> NO		BY (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER: (Specify) CONTRACTOR NAME(S):			
02 SITE STATUS (Check one) <input type="checkbox"/> A. ACTIVE <input type="checkbox"/> B. INACTIVE <input checked="" type="checkbox"/> C. UNKNOWN		03 YEARS OF OPERATION BEGINNING YEAR / ENDING YEAR <input checked="" type="checkbox"/> UNKNOWN			

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Possible heavy metals (zinc, copper, lead) from wastewater discharge.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Possible contamination of Williamson Creek through discharge of wastewater.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT <b>Mose McCall</b>		02 OF (Agency/Organization) <b>GA EPD</b>		03 TELEPHONE NUMBER <b>(404) 656-7802</b>	
04 PERSON RESPONSIBLE FOR ASSESSMENT <b>Gilda A. Knowles</b> <i>G.A.K.</i>		05 AGENCY <b>DNR-EPD</b>	06 ORGANIZATION <b>RAU</b>	07 TELEPHONE NUMBER <b>(404) 656-7404</b>	08 DATE <b>02-19-86</b>

*P.M. Allen*



TETRA TECH EM, INC.

Site: Lotex Construction Company, Thunderbolt,  
Chatham County, Georgia

TDD No. 4T-01-10-A-006

Task Monitor: Charles King

Logbook No. \_\_\_\_\_

Tetra Tech Em Inc., START project manager: Franki Jewell

(For Single Project Use Only)

Project No.: G90071/E011006/JDD No. 4T-01-10-A-006

Project Location: Lotex Construction Company,  
Thunderbolt, Georgia

Site ID/GPS: \_\_\_\_\_

Issuance No.	Date	Name	Last Page Used

## Reference 12

Field Logbook No. \_\_\_\_\_

Date 3/27/01

March 27, 2001

0915 START personnell Sandra Norrigan  
& Franki Jewell depart a different  
site to go to Thunderbolt water department  
from appointment with Yvonne  
Jeltovic, office manager and zoning  
Administrator City of Thunderbolt  
to collect water samples from the  
Municipal Well's and to collect  
water service target information.

0945 Personnel arrive at Thunderbolt  
Town Hall and speak w/ Yvonne  
Jeltovic, office manager, who informs  
us that the Water Dept. Superintendent  
has a 10:00am appointment &  
could not meet with us. She said  
to come back at 10:30 and he could  
assist us in collecting the water samples  
& provide service information.

1000 Personnel Calibrate the Horiba and label  
sampling containers.

1025 personnel arrive back at the Town Hall

1055 personnel arrive at Well No. 2

Behind the police station off of Mechanics  
Drive. Yvonne Jeltovic had given

Date 3/27/01

2 map of the City of Thunderbolt to  
START personnel. Well No. 2 is circled  
on map & personnel noted its location.  
Personnel Begin taking parameters

Time	Temp	Cond	pH	Turbidity
1055	20.6°C	0.311	7.09	- 100
1100	21.6°C	0.281	7.97	- 100
1103	21.9°C	0.277	8.04	- 10
1105	21.9°C	0.277	8.05	- 10

1105 Personnel collect sample A Sample is  
collected of the raw water, before it is treated  
with Chlorine.

Appendix: While personnel were waiting  
for the superintendent. Mr. Jeltovic & her  
assistance provided a town map, the  
Number of ~~Conn~~ connections the water  
Co. provides water to (1,200). Fred, the  
superintendent arrived & told personnel  
water is blended from both wells  
prior to distribution. There is presently  
no emergency standby well, but plans  
are to put one in use in the near  
future. Thunderbolt Water Company's  
Service area is the City of Thunderbolt.  
It does not supply water to any outlying

Date 3/27/01

2005. Mrs. Jeltovic told personnel  
that the only Private wells within the  
City distribution area are on Armstrong  
Island. Fred takes personnel to  
Well No. 2.

1120 Personnel arrive at Well No. 1 of  
of the corner of River Rd & Russell,  
adjacent to (north of) Thunderbolt Harbor (combining)  
and west of the Wilmington River.

1125 personnel begin taking parameters.  
Sample will be collected of the raw water,  
before treatment (w/ Chlorine).

Time	Temp	Cond.	pH	Turbidity
1125	20.3°C	0.280	7.81	86
1130	21.2	0.294	8.01	<del>10</del> 5102
1135	21.4	0.330	8.01	(*)
1140	21.6	0.330	8.00	- 10 (*)

1140 Personnel collect sample LC-01-mw  
from Well no. 1.

(\*) Note the Norbis Turbidity measurements  
were very erratic. The values would jump  
around non-consecutively from low to high  
& high to low & would not stabilize.  
During the previous sample person ~~not~~  
the turbidity values indicated a "10".

Date 3/27/01

✓ The turbidity indicator consistently Blinkd, whereas, for the other parameters, the specific indicator that was "highlighted" selected (ie pH or temp) remained stable & did not blink.

150 personnel depart well No. 2 location <sup>2:30</sup> to return to other site and meet <sup>2:45</sup> with other START personnel.

Personnel will not conduct any more sampling for the latex construction company site today. Sampling activities for latex will continue upon completion of sampling activities for the other site. End of entries

J. Jewell recording

*Frank J. Jewell 3/27/01*

Date 3/30/01

0815 Meet w/ Mr. T.L. Brooks, owner of Thunderbolt Marine & power water property & Mr. Bourgeois owner/operator of Palmer Johnson, PRP contractors Larry Miles & Stuart Dickson w/ SAME.

J. Jewell meets to discuss site history w/ PRP consultants while other START members prepare for the day activities.

0910 Personnel collect trip Blank & split trip Blank w/ SAME.

0945 PRP J. Jewell walks around w/ PRP consultants.

Monitoring Well, No. 65, 12", Universal Valve Co., Elizabeth, NJ noted.

Another MW, w/ same information is noted in the North yard, ~ 30-40 feet NE of fence line.

1125 Personnel report for surface soil & subsurface soil sample location LC-09-55.

1140 Start Personnel collect Surface Soil Sample LC-09-55 from the Trans for pit located in the North Storage Yard. LATITUDE  $32^{\circ}01'21.119''$  N Long  $81^{\circ}02'49.719''$  W Trans for Yard ~ 50 yards by 25 yards.

3/30/01

NT



Soil is moist. Shells are brought to this location for ~~different~~ different types of burrowing. JESS personnel begin digging for the subsurface soil LC-09-SS in the same location. LC-09-SS. Soil moist, grey sand, some small pebbles & gravel. 1200 Subsurface Soil sample collected between 2 1/2 & 3 feet. Soil contains pieces of shell & is very moist. All samples will be collected according to Region 4, EPA, SESD, Standard Operating Procedures.

3/30/01

1205. I & we take photo of Ben Cole collecting Extractables & Metals portion of the subsurface soil sample. The VOA portion was collected directly from the sugar bucket, into the jar.

1230. S. Warrigan takes photo<sup>2</sup> facing West of the LC-02-SS/SS location which she & Brian Cole sampled.

1235 Personnel take samples back to staging area & prepare to depart for lunch.

Addendum: Personnel decontaminated several dirty sugar buckets prior to the days sampling activities. Personnel collected a Rinseate Blank after decontaminating the PRIP soil & the Rinseate blank sample. All other equipment has been predecontaminated at the START office, and has been wrapped.

NOTE: During the morning consultation with the PRIP, Mr. T.L. Brooks & the JME consultants, ~~Mr. Larry Miles~~ ~~Mr. Mr. Bourgeois~~, Palmer & Johnson said that monitoring wells are located onsite, however he nor Mr. Brooks did not know which <sup>one</sup> when the monitoring wells were installed. They did not have information

Regarding the installation of the monitoring wells. Mr. Larry Miles, Sr. said that without having construction information that his company would not consider any samples collected from the monitoring wells as valid & would reuse samples collected from the on-site monitoring wells would be considered ~~not~~ to be suspect. I told Mr. Miles that we would make every effort to obtain well construction data.

I gave a message with Charles King to see if he could check with M&EPD to see if they have any information on the monitoring wells or any additional file material.

1245 Personnel broke for lunch.

1405 Personnel return to working area & prepare for sampling.

1435 Personnel arrived at one of the monitoring wells and attempt to open the outer casing. Personnel open casing & the well is 4-inch PVC. This location is LC-07-GW. well was locked. Depth

to water was 2 feet. Depth of well was 15.7 - 6.2 = 9.5. Water Column is 9.5 (15.7 - 6.2). Purge multiplier for 4-inch monitoring well is 0.653.  $9.5 \times 0.653 = 6.2035$  (one well volume).  $6.2035 \times 3$  (3 well volumes to be purged) is 18.61. Therefore 19 gallons will be purged.

1515 personnel began purging monitoring well from which LC-07-GW will be collected. Lat/Long: 32°01'29.995" and 81°02'53.308W

Time	Temp	pH	Cond.	Turbidity
1530	20.0°C	8.13	1.16 mS/cm	1.0
1600	19.7°C	8.23	1.02	3 x 27 gallons
1610	19.5°C	8.16	1.00	3 x 29 gallons
1615	19.4°C	8.11	1.01	2 x 30 gallons

Date 3/30/01

1600 D. Brown collects surface soil sample LC-03-SS South of the monitoring well located adjacent to one of the large gran boulders.

Addendum: Jewell takes photo facing S. SW of Monitoring well where LC-07-GW will be collected (at 15:25). At 15:35 Jewell takes photo 4, facing South of Monitoring well where sample LC-02-GW will be collected. The Marina "Basin" is located in the Background.

1605: Jewell takes photo of D. Brown collecting Surface Soil sample LC-03-SS adjacent to the Bldg 104.

1620 Personnel collect Subsurface soil sample location LC-03-SB. Sample collected  $\approx 1\frac{1}{2}$  feet east of the Surface soil sample location.

Personnel was at  $\approx 1\frac{1}{2}$  ft 16 inches BLS when encountered large refusal at the first Boring location.

NOTE: At least 30 gallons of water have been purged from the well (LC-07-GW). Personnel prepare to sample MW - LC-07-GW.

Date 3/30/01

1630 Personnel collect groundwater sample from ~~MW-04~~ LC-07-GW.

Personnel return to staging area to prepare to depart.

Addendum - Lat/Long for Surface Soil LC-03-SS and Subsurface Soil LC-03-SB. Lat/Long:  $32^{\circ}01'25.910''$  /  $91^{\circ}02'56.541''$ . Coordinates taken from in between the two locations.

1745 Personnel Depart Site. End of Day.

*Frank Jewell*  
3/30/01

Field Logbook No.

Date

3/30/01

File

3/30/01, 1800: noon p.m.: Monitoring well locations were marked on a large site layout map that Mr. Richard ~~Burgess~~ <sup>Burgess</sup> provided. The large site layout map is more accurate than the site layout map included in the SSSP.

Simple locations and Building Numbers, and pertinent facility information in features on the large site layout diagram provided by Mr. Richard ~~Burgess~~ <sup>Burgess</sup>.

*Frank J. Jewell 3/30/01*

Field Logbook No.

Date

3/31/01

Saturday, 3/31/01—

1100: Personnel meet in hotel parking lot to do ~~gross~~ <sup>full</sup> wash. ~~Foot decon~~ <sup>all dirt</sup> equipment to be taken back to the STORT warehouse for full decon.

S. Henry processes samples from the previous day. O. Brown & S. Harrigan went to get supplies (site fluids, new locks for the monitor wells, rope, 3 blocks, etc.).

Ben Cole will wash equipment. J. Jewell is going through site files & over the site diagram to assess remaining sample locations & assess current equipment stock & determine equipment needs. 500. Personnel completed project related tasks for the day.

*Frank J. Jewell 3/31/01*

2/21/01 4/2/01

Monday 4/2/01 Weather ~~partly~~ Mostly clear w/ somewhat of an overcast High expected to be low 60's High 60's/low 70's.

0740 Personnel arrive on-site & begin preparing for the day's activities.

Jewell calls Charles King at EPA & leaves a voice mail message.

Regarding the facility almost all covered with concrete & the lack of any good locations to collect surface & sub-surface soil sample for documentation of source area on-site contamination. Jewell

informed Charles King that START could rent a corer/drill to core through the concrete either at \$50.00 per day, however if we were down the drill bit ~~we would~~ we would cost an additional \$200 for the bit. A second option was to have someone from the ~~rental~~ equipment rental facility to come on-site & core the holes for us at \$70.00 per hole. Assuming only

2/21/01 4/2/01

4 holes would be needed, that option would be a total cost of \$280.00 personnel prepare to keep START & P. Brown clear site walk through to look for soil sample areas w/ soil and additional moisture wells depicted on Lockheed Martin investigation maps. S. Hamilton S. Nannigan & Brian Cole depart to collect water sample from 2nd On-site moisture well Jewell speaks w/ Mr. Brooks @ previous site activities.

0935. Jewell ~~turns~~ turns logbook over to P. Brown & Brian Cole who go down in the boat to collect samples from the inside Basin. 1000 The facility has loaned START a skiff to utilize for surface water and sediment sample collection. START is at the basin for the facility on the far west end of the basin, adjacent to the boat slips, adjacent to berth 5.

1240 START collect the LC-09-SW sample, the sample is being collected from the east central portion of the basin ~ 30 yards from confluence with Wilmington River, and ~ 10 feet from docks adjacent to the river. pH 9.10, Cond 26.1, Turb 98, DO 9.53 mg/L, Temp 17.9°C, salinity 1.59‰. The coordinates for this location 32°01'26.660"N; 81°02'50.510"W

1300 START collects the LC-09-SD sediment sample from the same location as LC-09-SW, sediment collected with petite ponar dredge. Sediment consists of dark brown colored silt, no noticeable odor. Sediment sample collected from 15 foot depth.

1330 Note: Sample depth for the LC-08-SD sediment sample is 17 foot depth. Surface water parameters for LC-08-SW: pH 8.13, cond 26.1, Turb 86, DO 12.48, Temp 19.5°C, salinity 1.66‰

1510 START is at the LC-10-SD sample location which is ~ 25 yards from the east of the entrance to the basin on the Wilmington River - 1600 - made many (~15) attempts with PONAR dredge - on each side of boat for LC-10-SD. Sediment is composed of dark gray sandy silt with <sup>small</sup> shell pieces and no odor

also fragments of glass - sample collected from 33 foot depth. Sample coordinates: 32°01'28.503"N 81°02'46.133"W

1730 START is at the LC-02-SD sediment sample location which is on Williamson Creek adjacent to the site property. START collects the sediment from the bank of Williamson Creek ~ 3 feet from a pipe which discharges to the creek. Sediment collected adjacent to area of overgrown vegetation. Sample collected at sediment and surface water interface, access gained by using SKIFF.

4/2/01

1731 LC-02-SD Sample consists of sandy silty clay with pebbles mixed in, sediment dark in color. Sample coordinates  $32^{\circ}01'19.982''$  N,  $81^{\circ}02'51.631''$  W.

1755 START Collects The LC-03-SD sediment sample from Williamson Creek, from the creek bank on site property adjacent to large warehouse structure, this building is sitting on wooden pilings, pile material indicates that this structure is a former hazardous waste storage area, a lot of vegetation present at this location, sediment collected at sediment, surface water interface, sediment consists of silty sand, dark brown/black in color, no odor. Coordinates:  $32^{\circ}01'16.182''$  N,  $81^{\circ}02'49.011''$  W.

1820 START collects LC-04-SD sediment sample collected from Williamson Creek on creek bank at sediment surface water interface ~ 10 feet from on outfall near main ship refurbishing building

4/2/01

1821 This location is also adjacent to the south storage yard. Coordinates  $32^{\circ}01'17.976''$  N,  $81^{\circ}02'46.0''$  W. Sediment consists of dark colored silty sand.

1900 J. Jewell retains logbook. Personnel are preparing samples for shipment.

1910 D. Brown + S. Henry depart site with samples for feed E.V.

1920. Remaining personnel depart site for hotel. End of Day.

*J. Jewell*  
4/2/01

Date 4/3/01

0725 Personnel stop to get ice for samples + site fluids. Weather is somewhat clear w/ some overcast with an expected high of 74°F. There is a slight (30%) chance of rain.

0905 P. Brown, J. Jewell, + ~~Patric~~ <sup>Patric</sup> + Patric Michon of SINE depart site in boat to collect surface water samples in Williamson Creek.

~~Personnel collect surface water sample LC-01-SW and LC-01A-SW~~

0915 Personnel collect LC-05-SW. from ~~just~~ <sup>at</sup> the confluence of Williamson Creek w/ the Wilmington River.

Time	Temp	pH	Cond	Turbidity	Salinity
0925	78.8	7.77	30.5	89	1.89%

Latitude: 32°01'22.303" N

Longitude: 81°02'42.296" W

J. Jewell takes photo of confluence + sample location. Yachts at Palmer Johnson.

1030 Personnel stop at sediment sample location LC-11-SD, ~~downstream~~ <sup>downstream</sup> (towards the ocean).

Date 4/3/01

of Palmer Johnson, ~100 yards from the confluence of Williamson Creek with the Wilmington River.

1045 Personnel collect sediment sample LC-01-SD. Sediment is collected with a portable Ponar dredge. Enough sediment for START + SPLIT sample. ~~SD~~ <sup>SD</sup> is collected with the dredge. Depth to Bottom of River is ~15 feet. Personnel had drifted out to center of the channel & were not pulling any sediment up with the dredge. Personnel move closer to the bank & closer to the original location. Sample is ~50-60 feet off the western edge of the River.

1115 Sample LC-11-SD actually collected.

Actual depth to bottom of the River is 10 feet below the surface of water. Actual sample, completed portion from the dredge came from the middle of the channel. Width of channel ~110 yards across.

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Date 4/3/01

1200 Grays Creek 32°01'23.405" N  
 Longitude 81°02'24.749" W  
 Bridge is the only bridge of the U.S. Army  
 Corps of Engineers in the area all the  
 River is in the River Channel.  
 to channel is relatively  
 narrow. It is located in the  
 middle of the Channel. 75 yards  
 from the on-site dam. Pots are  
 set out in the channel by people  
 to catch crabs.  
 1225 Personnel (J. Jewell) takes photo,  
 facing north of sign on small gray  
 building being the North side of  
 the On-Site Basin "Monster Habitat."  
 1215 Personnel, J. Jewell & D. Brown  
 & S. M. Patrick Graham depart site  
 in Boat to Collect sediment sample  
 at the confluence of Grays Creek  
 with the Wilmington River. This will  
 be a control sample to "control" for  
 any types of contaminants transferred  
 from Grays Creek.  
 1230 Personnel collect sediment sample  
 LC-06-SB from the South bank of

Field Logbook No. \_\_\_\_\_

Date 4/3/01

Grays Creek, just upstream of the  
 confluence with the Wilmington River,  
 off a small dock located on the  
 Island across the River from  
 Palmer Johnson. Sample contains  
 dark black substance & had a  
 sulfur-like odor. Shell S. Army  
 Corps of Engineers & Palmer Johnson  
 Depart dredge materials from  
 the Snake Basin, Wilmington Creek  
 & the Wilmington River, on this  
 Island.  
 1240 J. Jewell takes photo of Black  
 Substance in sample location.  
 1250 Personnel arrive at "background"  
 "Control Sample" LC-07-SB, on the  
 Wilmington River. Location is near  
 the east bank of the Wilmington River  
 1275 feet east of U.S. Army Corps of  
 Engineer's Marker No. 33, which is the mark  
 is closest to the middle of the Channel.  
 1255 Personnel drop dredge  
 to start collecting LC-07-SB

4/3/01

Depth to Bottom of River was ~ 3 feet Below Surface of the water. This location is upstream of Sea Ray of Savannah, Savannah Bend Marina + Indewater Boat Works. Sediment is very silty, with much macrofauna. Sample is also upstream of Isle of Amethyst and across from a green "Thanks, Resume safe speed" sign.

Latitude:  $32^{\circ}02'23.547''$

Longitude:  $81^{\circ}02'35.229''$

Addendum: The sediment at LC-06-SD is just upstream of the confluence of Mayo Creek with the Wilmington River. It was more clayey with less macrofauna content.

Addendum: Latitude + Longitude of the Mayo Creek / Wilmington River Confluence. Sample LC-06-SD is as follows:

Latitude:  $32^{\circ}01'49.117''$

Longitude:  $81^{\circ}02'45.847''$

13/5 personnel head back to the dock to deliver samples to the staging area.

4/3/01

Addendum: Background sediment sample LC-07-SD was collected well upstream of the Hwy 80 Bridge. No surface water samples were collected from the Wilmington River. No organics are expected to stay in the surface water due to the large size / thus dilution by the Wilmington River. Inorganics would likely settle in sediments. 1500 D. Brown, J. Jewell, STORT, + P. Graham, J. ME depart dock for remaining Williamson Creek samples. 1505 Personnel collect sediment sample LC-05-SD from the confluence of the Williamson Creek with the Wilmington River, from the North West Bank of the Wilmington River in a muddy bank area. Sediment sample was collected below the water line at the far southeast corner of the facility. 1520 Personnel collect surface water sample LC-04-SW from the general vicinity of LC-04-SD, collected yesterday.

Field Logbook No. \_\_\_\_\_

Date

4/3/61

~~0845 P 61900 Personnel have packed up equipment & depart the site~~

~~End of Day.~~

*Frank J. Jewell 4/4/61*

Field Logbook No. \_\_\_\_\_

Date

4/4/61

~~0820 D. Brown~~ 0805 personnel arrive at site & begin preparing for the day activities.

0820 D. Brown & J. Jewell arrive at background location. ~~At 0820~~ Jug hole remained covered & secured. Personnel begin advancing bore hole.

Note: Weather is clear, presently 56° with an expected high of 74°. Chance of showers 20-30%.

0845 ~~at 0845~~ Soil becomes moist at x 6 feet B/S.

0940 Well is 8.5' deep & contains 3 feet of water, thus water column is 5.5' ( $5.5 \times 0.163 = 0.89$ , one well volume.  $0.89 \times 3 = 2.7$  gallons.) ~~8.10~~

At least 2.7 gallons will be purged ~~at 0940~~

0945 Begin purging well

1010 Personnel had purged  $\approx 3$  gallons & the well went dry. ~~when 600 of the well~~

1020 Well begins to recharge slowly  
1030  $\approx 5$  gallons have been purged  
Infiltration is  $\approx 66$ . Personnel are pumping water with the peristaltic pump as slow so the pump can still continue to pull

Date 4/4/01

Water ———  
 1035 at  $\approx 5$  to  $5\frac{1}{2}$  gallons purged well  
 has gone dry again.

1040 J. Jewell  
 contacts Roger Carlson at SESD to help  
 define "best effort" to ~~the~~ "best attempt"

to reach a low or stabilized turbidity  
 reading on temporary monitoring wells

R. Carlson of SED SESD told J. Jewell  
 so long as the pump is pumping

low flow and the turbidity readings  
 are gradually declining so the well

is being purged, continue to purge  
 & collect readings. If however the

turbidity reading has stabilized  
 stabilized over several readings

& several purge volumes & it does  
 not appear that the turbidity

will decline go ahead & sample.  
 J. Jewell informs personnel

1040 Well begins to recharge & pumping  
 resumes. Turbidity 30.8 NTU.

$5\frac{1}{2}$  to 6 gallons have been purged.

1050  $\approx 6\frac{1}{2}$  to 7 gallons have been purged  
 turbidity is 6.2 NTU.

Date 4/4/01

Personnel will obtain Norbu Water Quality  
 meter from other sampling team & collect  
 Obtain other parameters. After other  
 parameters have stabilized, personnel  
 will collect samples.

Time	Temp	pH	Conductivity	turbidity
1100	18.60	8.34	.544	212.0

$\approx 7$  gallons have been purged

1105	18.6	7.5	7.15	.572	4.10/1.5
------	------	-----	------	------	----------

$\approx 8$  gallons have been purged

1110	18.3	7.09	0.550	0.7
------	------	------	-------	-----

$\approx 9$  gallons have been purged

1115 D. Brown takes other Turbidity  
 meter & Norbu over to other sampling  
 team. The separate turbidity meter  
 appears to be giving more accurate  
 readings. The water at the background  
 location is very very clear. The  
 separate turbidity meter readings  
 are recorded above. The Norbu  
 Turbidity readings for the above  
 times were all 20. Second sampling  
 team will use the separate  
 Turbidity meter to determine  
 turbidity & will sample when the

4/4/01

Turbidity is 10 or below & has stabilized.  
1125 Personnel collect background  
groundwater sample LC-01-GW.  
Personnel collect 100 portion of the  
sample w/ a clean bailer, (being careful  
not to touch the bailer to the bottom  
of the well) so that the sample will  
not touch the peristaltic pump  
 tubing.

1135 Personnel put the vacuum  
cap on the amber bottle & restart  
the peristaltic pump. Personnel  
have purged about 10 gallons.

1215 Personnel complete the sample.  
Sample was split w/ PRP contractor.  
LATITUDE =  $32^{\circ} 01' 32.78''$  N  
Longitude:  $81^{\circ} 02' 59.143''$  W

of Background sample LC-01-SS,  
LC-01-SB, & LC-01-GW.

NOTE - reading was collected 10 feet east  
of the sample, due to a very large tree  
interfering with the signal of the  
direct location.

1245 Jewell takes photo facing east  
of the temporary monitoring well

4/4/01

installed on the eastern side of the Palmer  
Johnson facility located on the east side of  
the North yard.  
1300 Second sampling team began  
began sampling, temp well went  
dry & was recharging very very  
slowly. D. Brown, S. Henry, & J. Jewell  
depart site to check out of hotel by  
2:00pm. S. Harrigan & Brian Cole  
remain to watch equipment & monitor  
temp. well. Personnel will keep  
one room to store personnel luggage  
& use for clean-up after sampling  
activities are complete.

1430 Personnel return to site.  
Metal portion of LC-03-GW  
has been collected. Well went  
dry & waiting for recharge again.

1530 J. Jewell contacts Henry Imborn,  
with the City of Savannah to see if  
the City has any further dismantling  
of information in the former latex  
Construction Company site. Henry  
said that City of Savannah does not  
keep information or get involved with

4/4/01

By the EST is complete & that personnel were departing the site.

1645 Personnel, S. Henry, J. Harrigan, & J. Jewell depart site for hotel.

1730 Personnel fill up w/ Gas & depart hotel for Fed. Ex. to ship the last Samples.

1800 Personnel drop samples off at Fed. Ex. & depart for Atlanta.

2300 Personnel arrive at START office in Duluth, GA & unload equipment.

Addendum: The following notes were taken by Ben Cole on 4/3/01, who collected surface & subsurface soil samples while <sup>other</sup> personnel were in the boat collecting surface water & sediment samples from the Williamson Creek & the Wilmington River. Notes transcribed here by J. Jewell on 4/4/01 @ 1920:

4/3/01 @ 0915, B. Cole collects surface soil sample LC-04-SS from the southern end of the South Storage Yard behind Bldgs 203 & 204 from soil located in between the asphalt & the southern

fence line. The concrete berm between the asphalt & soil near the fence line had been breached in this area. Thus any runoff from <sup>the</sup> surface water runoff would from this area would enter Williamson Creek. Soil was brown, silty sand some organic fragments, gravel, & pieces of litter.

4/3/01 @ 0940 Ben Cole collected subsurface soil sample from same location as surface soil sample. This sample is LC-04-SB) soil was mixed brown, gray-black sand.

4/3/01 @ 1008 ~~0955~~ Ben Cole collected surface soil sample LC-08-SS from the south east side of the facility, adjacent to the southeast corner of the ~~shut~~ on-site basin. Soil was brown silty sand.

4/3/01 @ 1020 Ben Cole collected subsurface soil sample LC-08-SB from the edge of the concrete, ~ 3 feet from surface soil sample LC-08-SS. Soil was dark brown-black, silty sand.

4/3/01 @ 1120 B. Cole collected background

any documentation to that effect, or any water manifests. He said he did not think that he had any. He said that the Environmental Lawyer, Mr. Vance Hughes may have some information. I asked Mr. Brooks if Lacey Construction Company had any surface water runoff controls or containment systems in place during its operation of the facility. Mr. Brooks said that he did not recall any.

Additional Notes: During the facility walk through on March 30, 2001, Larry Miles of START asked if we (START) were going to conduct a potentiometric surface study prior to installing temporary monitoring wells, in order to determine the direction of groundwater flow. I told Mr. Miles that the EST was a limited study & a potentiometric surface study was not included in the EST scope of work & that they were usually conducted during Contamination Assessments & RI/FSs. I explained

that the temporary groundwater wells would be shallow wells installed in the Surficial Aquifer and that the Surficial Aquifer most likely flowed towards the Wilmington River or towards Williamson Creek in the northern portion of the facility.

Mr. Miles pointed out that this area is tidally influenced. I acknowledged that & told Mr. Miles we would look for a background location off site & up gradient of groundwater flow towards the Wilmington River.

Mr. Larry Miles was very concerned about underground utility lines & how we would determine the locations of underground lines when choosing our sample locations. I informed Mr. Miles that we contacted "Call-before-you-Dig" & scheduled them to mark lines & that they had marked the lines on Monday. Mr. Miles said that they only do "right of way" in Georgia. START personnel observed that on-site

Utility lines (underground) were marked on April 3 + 4th 2001.

Mr. Miles stated that he wanted @ rinseate blank split after every time we disconnected the ponor dredge between sampling locations. During sampling activities, I told Patrick Graham, Sr ME personnel that according to EPA, SESD, Standard Operating Procedures + Sampling Protocol guidance (that I had spoken w/ Roger Carlton of SESD) that it was not necessary to collect Rinseate Blanks after every single on-site clean of the Ponor Dredge + that 1 one Rinseate Blank in every ten cleans was the General SOP. Patrick said that 2 Rinseate Blank split sample was not necessary after every clean.

NOTE: Sediment samples that were not collected with the ponor Dredge (Williamson Creek sediment samples, + sediment sample LC-06-S collected from Gray's Creek) were

collected at the Surface Water/Sediment interface  $\approx$  0-3 inches below sediment surface. Sediment samples collected with the Ponor dredge were collected  $\approx$  0-8 inches below sediment surface. Sediment samples collected from Williamson Creek were collected at or near high tide.

Personnel left new locks with Mr. Brooks to put back on permanent monitor well caps.

Surface water samples were collected from the top of the surface of the water from 0-3 inches.

Contact information:

T. L. Brooks, Thunderbolt Marine Inc.  
(912) 352-4931.

Harry Miles, Sr ME, Thunderbolt Marine Inc. Consultant (912) 353-8885

Stewart Dickson, Sr ME (912) 927-9241

Skip Robinson, Vice President, Palmer Johnson  
(912) 352-4956

Richard Bourgeois, Environmental Manager,  
Palmer Johnson

Frank L. Jewell 9/6/01



**Tetra Tech EM Inc.**

Gwinnett Corporate Center ♦ 1750 Corporate Drive, Suite 735 ♦ Norcross, GA 30093 ♦ (770) 935-1542 ♦ FAX (770) 935-9049

February 11, 2000

Carolyn Thompson  
Remedial Project Manager  
U.S. Environmental Protection Agency, Region 4  
61 Forsyth Street, SW 11th Floor  
Atlanta, GA 30303

**Subject: Property Access Information  
Latex Construction Company Expanded Site Inspection  
U.S. EPA ID No. GAD980803696  
EPA Contract No. 68-W5-0021  
TDD No. 04-9902-0004**

Dear Ms. Thompson:

The Tetra Tech EM Inc., Superfund Technical Assessment and Response Team (START), is submitting an access information sheet for the Latex Construction Company, expanded site inspection (ESI). Included is a property map for further clarification.

Please contact me at (770) 717-2305 if you have any questions or comments regarding this work plan.

Sincerely,

David L. Brown  
START Project Manager

Enclosure

cc: START file

### ACCESS INFORMATION SHEET

Site Name: Latex Construction Company  
Site Address: 3124 River Drive  
Thunderbolt, GA  
EPA ID#: GAD980803696

Project Manager: Dave L. Brown  
EPA Contact: Carolyn Thompson  
Field Date: To be determined  
TDD No.: 04-9902-0004

The Latex Construction Company (Latex) site comprises 27 acres, is located on the Wilmington River, and currently refurbishes yachts. The current owners are Thunderbolt Marine, Inc.; however, the property is leased to the Palmer Johnson Company and River End Restaurant in Thunderbolt, Chatham County, Georgia. The property has been used to sandblast and repaint boats with paints that contain heavy metals. The following table presents the property owners and addresses of property owners determined to be located on the property. Telephone numbers were available for several, but not all, property owners.

Owner: Thunderbolt Marine, Inc. Address: 3121 River Drive Thunderbolt, GA 31404 Phone No.: (912) 352-4931	Operator: Palmer Johnson Savannah, Inc. Address: 3124 River Drive Thunderbolt, GA 31404 Phone No.: (912) 352-4956
--	--

Date Access Required: To be determined Date Information Submitted to EPA: 2/11/2000

CASINA PROPERTY THUNDERBOLT  
7.632 ac BASIN  
15.054 ac H

THUNDERBOLT MARINE INC  
PO BOX 5628

1996 ACREAGE CHG FROM 27.5 AC  
TO 22.686 AC PER PRB 8P 63  
REF: see legal for additional  
infor

		SAVANNAH		GA 31414-5628			
		Site Address: 003124		RIVER		DR	
Section	13	Store-Comme	38	110		Land Value	1,834,000
Business Code	1315	Restrnt Goo	58	POR(1144)	10	Misc Value	1,453,500
Quality/Class	24	Good Class	10	32		Bldg Value	2,642,000
Quality Fact	2	Plus 10%	52	20	22	Total Value	5,929,500
Exterior Wall	SID	Siding/Shin				Value By Cost - Market Adj.	
Stories	00	N/A					
Av Hght / Story	12	12' Wall Hg			17		
Avg Floor Area	10K	500 Multipl	38	GFA(11492)			
Avg Perimeter	500	Av. Pmtr =	22			Effective Area	11,492
Unit Multiplier	0000	N/A	WD(1497)2			Points	0.0000
Basement					51	Bldg Rate	86.33
Mezzanine						RCN	992,061
Heating Only			55	45		% Depreciation	0.5200
Heat/Air System	REST	Restaurant		12		OBSOL	0.0000
Air Cond. Only			29	69		Building Value	476,190
B/I Allowance							
Balcony \$/sf.	000000			CAN(650)		BOOK PAGE DATE QS	SALE PRICE
Elevator \$/sf.	000000					125I - 278	
Sprinklers				30			
Cost Multiplier	D	CLASS D					
Local Multiplier	S	Savannah				PERMIT NO TYPE DATE	AMOUNT
Actual Year Blt	1960		AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED
Eff. Year Built	1975						
Normal Depr Tbl	35	35-year Lif	GFA	11492	1.00	11492	1.00
Functional Obs.	000000		POR	1144	1.00	1144	1.00
Economic Obs.	000000		WD	1497	1.00	1497	1.00
Observed Cond	000000		CAN	650	1.00	650	1.00
Obsvd Cond Code							

		GFA(L32D8L20U10L58U8POR(R110D10L32D8L20U10L58U8)L38D52		R38D32L4WD(D29L17U55L22U46R5D40R38D32L4)D4R45ADD(L5)CA		N(L20D22R13D30R7U52)D12R69U51R8U17L8U22)	
		BD1 - RESTAURANT		- RIVERS' END		Total bldg. on wood pilings. Som	
		e haveCopper Sleeves filled with concrete, to help pr		otect the original piling.			

History Values		Tax Year Total Appraised Value	
99	5,929,500		
98	5,975,000		
97	6,002,000		

MISC BLDG CODE	DESC	LENGTH	WIDTH	UNITS	ADJ PRICE	EYB DT PCT	ADJUSTMENT	VALUE
1 1 CAN13F3	CAN STY 13 FR AB	.00	.00	650.00	17.55	00 20.00	.90	9,130
2 1 PORA	Comm porch avg	.00	.00	1144.00	9.04	00 20.00	.90	8,270
3 1 WD	Wood Deck Treat	.00	.00	1497.00	5.88	00 20.00	.90	7,040
4 2 CAN13F2	CAN STY 13 FR AV	.00	.00	670.00	14.40	00 25.00	.90	7,240
5 3 CAN13F2	CAN STY 13 FR AV	.00	.00	1127.00	14.40	1969 40 57.00	.90	6,980
6 4 STGA	Storage/Utility	.00	.00	112.00	7.20	00 40.00	.90	480
LAND LUSE DESC	ZONING	UNITS TP	PRICE	ADJUSTMENT	CODE/FACTOR	VALUE		
1 49 Comm Waterfront	C1	475.00 F	2200.00	DP 1.00	.00 .00	.00 1,045,000		
2 49 Comm Waterfront	C1	394502.00 S	4.00	CN .50	.00 .00	.00 789,000		
F 475.00 S 94502.00								

6  
(DISPOSAL AREA)  
38.67AC

WILMINGTON  
RIVER

WILLIAMSON  
S L VANCE AND DRIVE

CREEK

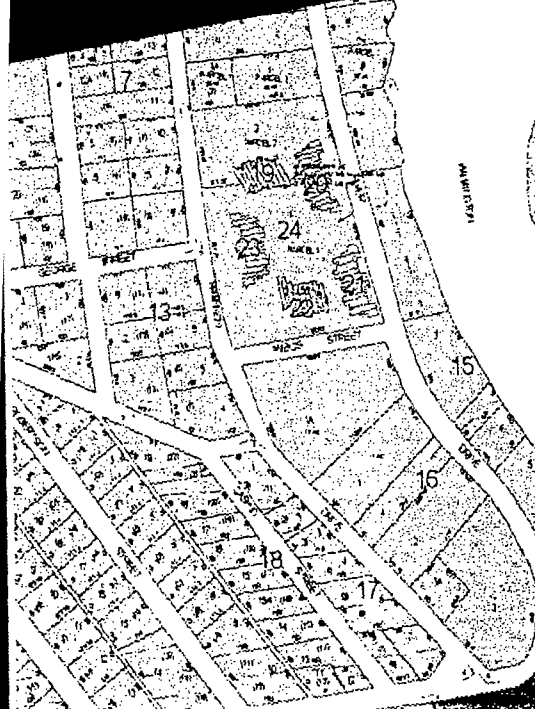
WILMINGTON

DRIVE

WILLIAMSON ISLAND  
1  
1027 AC  
(27 AC H)  
(1000 AC M)

LAKE

HIGHLAND



CLAIMED BY STATE OF GEORGIA

WILSON DRIVE

## CASINA PROPERTY THUNDERBOLT

THUNDERBOLT MARINE INC  
PO BOX 56281996 ACREAGE CHG FROM 27.5 AC  
TO 22.686 AC PER PRB 8P 63  
REF: see legal for additional  
infor

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER DR

Section 13	Store-Comme	38	110							Land Value	1,834,000
Business Code 1315	Restrnt Goo		58	POR (1144)	10					Misc Value	1,453,500
Quality/Class 24	Good Class		10	32						Bldg Value	2,642,000
Quality Fact 2	Plus 10%	52		20	22					Total Value	5,929,500
Exterior Wall SID	Siding/Shin									Value By Cost - Market Adj.	
Stories 00	N/A										
Av Hght / Story 12	12' Wall Hg								17		
Avg Floor Area 10K	500 Multipl	38		GFA (11492)							
Avg Permitter 500	Av. Pmtr =	22								Effective Area	11,492
Unit Multiplier 0000	N/A			WD (1497) 2						Points	0.0000
Basement									51	Bldg Rate	86.33
Mezzanine										RCN	992,061
Heating Only		55		45						% Depreciation	0.5200
Heat/Air System REST	Restaurment				12					OBSOL	0.0000
Air Cond. Only			29					69		Building Value	476,190
B/I Allowance											
Balcony \$/sf. 000000										BOOK PAGE DATE QS SALE PRICE	
Elevator \$/sf. 000000										125I - 278	
Sprinklers											
Cost Multiplier D	CLASS D										
Local Multiplir S	Savannah										
Actual Year Blt 1960		AREA	FLAT	EFF%	E/AREA	ACT%	A/AREA	EA/AA	HEATED	5	AD 0198 5,000
Eff. Year Built 1975										980001970	DR 0419
Normal Depr Tbl 35	35-year Lif	GFA	11492	1.00	11492	1.00	11492	11492	11492	22	CM 0319 60,000
Functional Obs. 000000		POR	1144	1.00	1144	1.00	1144	1144			Appraiser HC Harold Copeland
Economic Obs. 000000		WD	1497	1.00	1497	1.00	1497	1497			L/Ins.Dte 02/06/97
Observed Cond 000000		CAN	650	1.00	650	1.00	650	650			Use Code 0002 COMMERCIAL
Obsvd Cond Code											NBHD 20600.00 T600 THUNDERBOLT
											L100 M090 B100

GFA (L32D8L20U10L58U8POR (R110D10L32D8L20U10L58U8) L38D52  
 R38D32L4WD (D29L17U55L22U46R5D40R38D32L4) D4R45ADD (L5) CA  
 N (L20D22R13D30R7U52) D12R69U51R8U17L8U22).  
 BD1 - RESTAURANT  
 - RIVERS' END Total bldg. on wood pilings. Som  
 e have Copper Sleeves filled with concrete, to help pr  
 otect the original piling.

## History Values

Tax Year Total Appraised Value

99 5,929,500  
 98 5,975,000  
 97 6,002,000

MISC BLDG CODE	DESC	LENGTH	WIDTH	UNITS	ADJ PRICE	EYB DT PCT	ADJUSTMENT	VALUE
1 1 CAN13F3	CAN STY 13 FR AB	.00	.00	650.00	17.55	00 20.00	.90	9,130
2 1 PORA	Comm porch avg	.00	.00	1144.00	9.04	00 20.00	.90	8,270
3 1 WD	Wood Deck Treat	.00	.00	1497.00	5.88	00 20.00	.90	7,040
4 2 CAN13F2	CAN STY 13 FR AV	.00	.00	670.00	14.40	00 25.00	.90	7,240
5 3 CAN13F2	CAN STY 13 FR AV	.00	.00	1127.00	14.40	1969 40 57.00	.90	6,980
6 4 STGA	Storage/Utility	.00	.00	112.00	7.20	00 40.00	.90	480

LAND LUSE DESC	ZONING	UNITS TP	PRICE	ADJUSTMENT CODE/FACTOR	VALUE
1 49 Comm Waterfront	C1	475.00 F	2200.00 DP	1.00 .00 .00 .00	1,045,000
2 49 Comm Waterfront	C1	394502.00 S	4.00 CN	.50 .00 .00 .00	789,000

F 475.00 S 94502.00

SAVANNAH GA 31414-5628									
Site Address: 003124 RIVER DR									
Section 15	Off-Pub Bld	18							Land Value 1,834,000
Business Code 1500	Office Low	13GFA(315)							Misc Value 1,453,500
Quality/Class 44	Low Class								Bldg Value 2,642,000
Quality Fact 3	Aver 1.00								Total Value 5,929,500
Exterior Wall SID	Siding/Shin								Value By Cost - Market Adj.
Stories 00	N/A								
Av Hght / Story 09	9' Wall Hg								
Avg Floor Area 1000	150 Multip								
Avg Permitter 150	Av. Pmtr =								Effective Area 315
Unit Multiplier 0000	N/A								Points 0.0000
Basement									Bldg Rate 39.96
Mezzanine		31STG(496)							RCN 12,586
Heating Only									% Depreciation 0.0600
Heat/Air System									OBSOL 0.0000
Air Cond. Only									Building Value 11,830
B/I Allowance									
Balcony \$/sf. 000000		10STG(80)							BOOK PAGE DATE QS SALE PRICE
Elevator \$/sf. 000000									
Sprinklers									
Cost Multiplier D	CLASS D	12STG(120)							
Local Multiplier S	Savannah								PERMIT NO TYPE DATE AMOUNT
Actual Year Blt 1993		AREA FLAT EFF% E/AREA ACT% A/AREA EA/AA HEATED							
Eff. Year Built 0000									
Normal Depr Tbl 40	40-year Lif	GFA 315 1.00 315 1.00 315 315 315							
Functional Obs.		STG 696 1.00 696 1.00 696 696							Appraiser HC Harold Copeland
Economic Obs.									L/Ins.Dte 02/06/97
Observed Cond									Use Code 0002 COMMERCIAL
Obsvd Cond Code									NBHD 20600.00
									L100 M090 B100
		GFA(L18D13R9D9R9U22)ADD(D60R20)STG(L16D31R16U31)ADD(D4							
		0)STG(L8D10R8U10)ADD(D20)STG(L10D12R10U12).							
		BD14 - SMALL OFFICE							
		Small frame office near syncrolift hoi							
		st. 16'x31' frame bldg.							
History Values		(misc. item #19). 8'x10' frame bldg. (misc. item #20)							
Tax Year Total Appraised Value		10'x12' mtl. bldg. (misc. item #21).							

		SAVANNAH		GA 31414-5628	
		Site Address: 003124 RIVER		DR	
Section 13	Store-Comme	25		Land Value 1,834,000	
Business Code 1330	Retail Low	10		Misc Value 1,453,500	
Quality/Class 44	Low Class			Bldg Value 2,642,000	
Quality Fact 3	Aver 1.00			Total Value 5,929,500	
Exterior Wall SID	Siding/Shin			Value By Cost - Market Adj.	
Stories 00	N/A	33	GFA(825) 33		
Av. Hght / Story 10	10' Wall Hg		35		
Avg Floor Area 1000	100 Multipl				
Avg Permitter 100	Av. Pmtr =			Effective Area 825	
Unit Multiplier 0000	N/A			Points 0.0000	
Basement		CAN(1227)		Bldg Rate 31.55	
Mezzanine		25		RCN 26,029	
Heating Only		10		% Depreciation 0.5700	
Heat/Air System	13			OBSOL 0.0000	
Air Cond. Only				Building Value 11,190	
B/I Allowance	15	16			
Balcony \$/sf. 000000				BOOK PAGE DATE QS SALE PRICE	
Elevator \$/sf. 000000	16				
Sprinklers		11			
Cost Multiplier D	CLASS D	8			
Local Multiplir S	Savannah	29		PERMIT NO TYPE DATE AMOUNT	
Actual Year Blt 1969	AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED
Eff. Year Built 0000					
Normal Depr Tbl 40	40-year Lif	GFA	825 1.00 825 1.00	825 825 825	
Functional Obs.		CAN	1227 1.00 1227 1.00	1227 1227	Appraiser HC Harold Copeland
Economic Obs.					L/Ins.Dte 02/06/97
Observed Cond					Use Code 0002 COMMERCIAL
Obsvd Cond Code					NBHD 20600.00
					L100 M090 B100
		GFA(L25D33R25U33)ADD(D3)CAN(R10D35L10D16L11D8L29U16R15			
		U13R25U30).			
		BD3 - MARINA STORE			
		Frame bldg. with window a/c and large cove			
		red deck connecting it to BD4. and misc item #5.			
History Values					
Tax Year	Total Appraised Value				
93	2,415,030				
92	1,906,700				

22	15 STGA	Storage/Utility	.00	.00	400.00	7.20	00	25.00	.90	2,160
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SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER

DR

Section	14	Gar-Ind-Lof	30							Land Value	1,834,000
Business Code	1415	Manuf.lghtA	20CAN(600)G(400)							Misc Value	1,453,500
Quality/Class	35	Average Cla								Bldg Value	2,642,000
Quality Fact	4	Minus 10%	51							Total Value	5,929,500
Exterior Wall	MTL	Metal								Value By Cost - Market Adj.	
Stories	02	02 Story									
Av Hght / Story	12	12' Wall Hg									
Avg Floor Area	7000	350 Multip									
Avg Perimeter	350	Av. Pmtr =								Effective Area	14,994
Unit Multiplier	0000	N/A								Points	0.0000
Basement										Bldg Rate	24.31
Mezzanine			147 GFA(7497)							RCN	364,540
Heating Only			UFA							% Depreciation	0.6100
Heat/Air System PKG		Package A.C								OBSOL	0.0000
Air Cond. Only										Building Value	142,170
B/I Allowance											
Balcony \$/sf.	000000									BOOK PAGE DATE QS SALE PRICE	
Elevator \$/sf.	000000										
Sprinklers											
Cost Multiplier S		CLASS S									
Local Multiplier S		Savannah	51							PERMIT NO TYPE DATE AMOUNT	
Actual Year Blt	1972		AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED				
Eff. Year Built	0000										
Normal Depr Tbl	35	35-year Lif	UFA	7497	1.00	7497	1.00	7497	7497		
Functional Obs.	000000		GFA	7497	1.00	7497	1.00	7497	7497	Appraiser HC Harold Copeland	
Economic Obs.			STG	400	1.00	400	1.00	400	400	L/Ins.Dte 02/06/97	
Observed Cond			CAN	600	1.00	600	1.00	600	600	Use Code 0002 COMMERCIAL	
Obsvd Cond Code										NBHD 20600.00	
										L100 M090 B100	
			UFA;GFA(L51D147R51U147)ADD(L4)STG(L20CAN(L30U20R30D20)								
			U20R20D20).								
										BD15 - 2-STORY REPAIR FACI	
			LITY (PJ's	#202						Nume	
			rous rooms for repair purposes,							small amount of offi	
			ce space, and							common area for employees.	
History Values											
Tax Year Total Appraised Value										Attached to 35'hi manufacturing bldg. (see bldg. #16	
										& #17).	
										For STG & CAN, see misc. items	
										#22 & #23).	



SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER

DR

Section	14
Business Code	1425
Quality/Class	35
Quality Fact	3
Exterior Wall	MTL
Stories	00
Av Hght / Story	24
Avg Floor Area	2500
Avg Perimiter	175
Unit Multiplier	0000
Basement	
Mezzanine	
Heating Only	
Heat/Air System	
Air Cond. Only	
B/I Allowance	
Balcony \$/sf.	000000
Elevator \$/sf.	000000
Sprinklers	
Cost Multiplier S	
Local Multiplir S	
Actual Year Blt	1972
Eff. Year Built	0000
Normal Depr Tbl	35
Functional Obs.	
Economic Obs.	
Observed Cond	
Obsvd Cond Code	

Gar-Ind-Lof	
StgWhse Av	
Average Cla	
Aver 1.00	
Metal	
N/A	
24' Wall Hg	
175 Multip	
Av. Pmtr =	
N/A	
CLASS S	
Savannah	

Land Value		1,834,000
Misc Value		1,453,500
Bldg Value		2,642,000
Total Value		5,929,500
Value By Cost - Market Adj.		
Effective Area		2,500
Points		0.0000
Bldg Rate		25.90
RCN		64,754
% Depreciation		0.6100
OBSOL		0.0000
Building Value		25,250
BOOK PAGE DATE QS SALE PRICE		
PERMIT NO TYPE DATE AMOUNT		
0		
Appraiser HC Harold Copeland		
L/Ins.Dte 02/06/97		
Use Code 0002 COMMERCIAL		
NBHD 20600.00		
	L100 M090 B100	

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER

DR

[illegible]



SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER DR

Style	DRAW	Draw Only
Class	DRAW	DRAW ONLY

BD1 (3700)

94 BD2 (96) 276

Land Value	1,834,000
Misc Value	1,453,500
Bldg Value	2,642,000
Total Value	5,929,500
Value By Cost - Market Adj.	

Effective Area	0
Points	0.0000
Bldg Rate	0.00
RCN	0
% Depreciation	0.0700
OBSOL	0.9300
Building Value	0

BOOK	PAGE	DATE	QS	SALE	PRICE
------	------	------	----	------	-------

PERMIT NO	TYPE	DATE	AMOUNT
-----------	------	------	--------

AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
17	17	17	17	17
18	18	18	18	18
19	19	19	19	19
20	20	20	20	20
21	21	21	21	21
22	22	22	22	22
23	23	23	23	23
24	24	24	24	24
25	25	25	25	25
26	26	26	26	26
27	27	27	27	27
28	28	28	28	28
29	29	29	29	29
30	30	30	30	30
31	31	31	31	31
32	32	32	32	32
33	33	33	33	33
34	34	34	34	34
35	35	35	35	35
36	36	36	36	36
37	37	37	37	37
38	38	38	38	38
39	39	39	39	39
40	40	40	40	40
41	41	41	41	41
42	42	42	42	42
43	43	43	43	43
44	44	44	44	44
45	45	45	45	45
46	46	46	46	46
47	47	47	47	47
48	48	48	48	48
49	49	49	49	49
50	50	50	50	50
51	51	51	51	51
52	52	52	52	52
53	53	53	53	53
54	54	54	54	54
55	55	55	55	55
56	56	56	56	56
57	57	57	57	57
58	58	58	58	58
59	59	59	59	59
60	60	60	60	60
61	61	61	61	61
62	62	62	62	62
63	63	63	63	63
64	64	64	64	64
65	65	65	65	65
66	66	66	66	66
67	67	67	67	67
68	68	68	68	68
69	69	69	69	69
70	70	70	70	70
71	71	71	71	71
72	72	72	72	72
73	73	73	73	73
74	74	74	74	74
75	75	75	75	75
76	76	76	76	76
77	77	77	77	77
78	78	78	78	78
79	79	79	79	79
80	80	80	80	80
81	81	81	81	81
82	82	82	82	82
83	83	83	83	83
84	84	84	84	84
85	85	85	85	85
86	86	86	86	86
87	87	87		

BD1	3700	1.00	3700	1.00	3700	3700
-----	------	------	------	------	------	------

BD2	96	1.00	96	1.00	96	96
-----	----	------	----	------	----	----

```
|Appraiser   HC   Harold Copeland
|L/Ins.Dte   02/06/97
|Use Code    0002 COMMERCIAL
|NBHD        20600.00
|
|                                     L100 M090 B100
```

|BD1 (L370D10R94BD2 (L4D24R4U24) R276U10) .

BD1

REPRESENTS FLOATING DOCK IN FRONT OF DOCK MASTERS OFFICE. DOCK HAS A PLYWOOD DECK THAT HAS BEEN PATCHED. THE SURFACE HAS A NON-SKID PAINT. BD2 REPRESENTS THE METAL RAMP, MEDIUM DUTY WITH WOOD DECK AND HAND RAILS. CONNECTS DOCK MASTERS OFFICE AREA WITH FLOATING DOCK.

## History Values

Tax Year	Total Appraised Value
2010	1,000,000
2011	1,000,000
2012	1,000,000
2013	1,000,000
2014	1,000,000
2015	1,000,000
2016	1,000,000
2017	1,000,000
2018	1,000,000
2019	1,000,000
2020	1,000,000
2021	1,000,000
2022	1,000,000
2023	1,000,000
2024	1,000,000
2025	1,000,000
2026	1,000,000
2027	1,000,000
2028	1,000,000
2029	1,000,000
2030	1,000,000
2031	1,000,000
2032	1,000,000
2033	1,000,000
2034	1,000,000
2035	1,000,000
2036	1,000,000
2037	1,000,000
2038	1,000,000
2039	1,000,000
2040	1,000,000
2041	1,000,000
2042	1,000,000
2043	1,000,000
2044	1,000,000
2045	1,000,000
2046	1,000,000
2047	1,000,000
2048	1,000,000
2049	1,000,000
2050	1,000,000
2051	1,000,000
2052	1,000,000
2053	1,000,000
2054	1,000,000
2055	1,000,000
2056	1,000,000
2057	1,000,000
2058	1,000,000
2059	1,000,000
2060	1,000,000
2061	1,000,000
2062	1,000,000
2063	1,000,000
2064	1,000,000
2065	1,000,000
2066	1,000,000
2067	1,000,000
2068	1,000,000
2069	1,000,000
2070	1,000,000
2071	1,000,000
2072	1,000,000
2073	1,000,000
2074	1,000,000
2075	1,000,000
2076	1,000,000
2077	1,000,000
2078	1,000,000
2079	1,000,000
2080	1,000,000
2081	1,000,000
2082	1,000,000
2083	1,000,000
2084	1,000,000
2085	1,000,000
2086	1,000,000
2087	1,000,000
2088	1,000,000
2089	1,000,000
2090	1,000,000
2091	1,000,000
2092	1,000,000
2093	1,000,000
2094	1,000,000
2095	1,000,000
2096	1,000,000
2097	1,000,000
2098	1,000,000
2099	1,000,000
2100	1,000,000

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER DR

Style	DRAW	Draw Only
Class	DRAW	DRAW ONLY



Land Value	1,834,000
Misc Value	1,453,500
Bldg Value	2,642,000
Total Value	5,929,500
Value By Cost - Market Adj.	
Effective Area	0
Points	0.0000
Bldg Rate	0.00
RCN	0
% Depreciation	0.0700
OBSOL	0.9300
Building Value	0

BOOK	PAGE	DATE	QS	SALE	PRICE
------	------	------	----	------	-------

PERMIT NO	TYPE	DATE	AMOUNT
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|AREA      FLAT      EFF%   E/AREA   ACT%   A/AREA   EA/AA   HEATED

BD3	1840	1.00	1840	1.00	1840	1840
-----	------	------	------	------	------	------

BD4	208	1.00	208	1.00	208	208
-----	-----	------	-----	------	-----	-----

BD5	1856	1.00	1856	1.00	1856	1856
-----	------	------	------	------	------	------

BD6	60	1.00	60	1.00	60	60
-----	----	------	----	------	----	----

BD7	110	1.00	110	1.00	110	110
-----	-----	------	-----	------	-----	-----

\*\*Additional Subareas Exist, See Draw Summary Screen\*\*

L100 M090 B100

|BD3 (L230D8R36BD4 (L8D26R8BD5 (L72D8R10BD6 (L3D20R3U20) R84

[BD7(U5L22D5R22)R98BD8(L8D44R8U44)R40U8L160)U26)R194U8)]

| . BD3 REPRESENT

|TS 230' FLOATING DOCK IN FRONT OF RIVERS END. SAME HA

|S PLYWOOD WITH WOOD PATCHED DECK. BD4 REPRESENTS WOOD F

| LOADING DOCK CONNECTOR FROM WOODFLOATING DOCK TO CONCR |

ETE FLOATING DK.BD5&BD8 ARE CONCRETE FLOATING DOCKS.

|BD6 IS OLD WOOD RAMP W/HANDRAILS. BD 7IS METAL RAMP W/

HANDRAIL THAT CONNECTS RIVERS END REST. TO FLOATING DOCK

|KS.

History Values

Tax Year	Total Appraised Value
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F 475.00 S 94502.00

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER DR

Style	DRAW	Draw Only
Class	DRAW	DRAW ONLY

BD9 (2096) BD10 (128)  
262

Land Value.	1,834,000
Misc Value	1,453,500
Bldg Value	2,642,000
Total Value	5,929,500
Value By Cost - Market Adj.	

Effective Area	0
Points	0.0000
Bldg Rate	0.00
RCN	0
% Depreciation	0.0700
OBSOL	0.9300
Building Value	0

BOOK	PAGE	DATE	QS	SALE PRICE
------	------	------	----	------------

PERMIT NO	TYPE	DATE	AMOUNT
-----------	------	------	--------

AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
17	17	17	17	17
18	18	18	18	18
19	19	19	19	19
20	20	20	20	20
21	21	21	21	21
22	22	22	22	22
23	23	23	23	23
24	24	24	24	24
25	25	25	25	25
26	26	26	26	26
27	27	27	27	27
28	28	28	28	28
29	29	29	29	29
30	30	30	30	30
31	31	31	31	31
32	32	32	32	32
33	33	33	33	33
34	34	34	34	34
35	35	35	35	35
36	36	36	36	36
37	37	37	37	37
38	38	38	38	38
39	39	39	39	39
40	40	40	40	40
41	41	41	41	41
42	42	42	42	42
43	43	43	43	43
44	44	44	44	44
45	45	45	45	45
46	46	46	46	46
47	47	47	47	47
48	48	48	48	48
49	49	49	49	49
50	50	50	50	50
51	51	51	51	51
52	52	52	52	52
53	53	53	53	53
54	54	54	54	54
55	55	55	55	55
56	56	56	56	56
57	57	57	57	57
58	58	58	58	58
59	59	59	59	59
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62	62	62	62	62
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65	65	65	65	65
66	66	66	66	66
67	67	67	67	67
68	68	68	68	68
69	69	69	69	69
70	70	70	70	70
71	71	71	71	71
72	72	72	72	72
73	73	73	73	73
74	74	74	74	74
75	75	75	75	75
76	76	76	76	76
77	77	77	77	77
78	78	78	78	78
79	79	79	79	79
80	80	80	80	80
81	81	81	81	81
82	82	82	82	82
83	83	83	83	83
84	84	84	84	84
85	85	85	85	85
86	86	86	86	86
87	87	87		

BD9	2096	1.00	2096	1.00	2096	2096
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BD10	128	1.00	128	1.00	128	128
------	-----	------	-----	------	-----	-----

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|Appraiser   HC   Harold Copeland
|L/Ins.Dte   02/06/97
|Use Code    0002 COMMERCIAL
|NBHD        20600.00
|
|                                L100 M090 B100
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|BD9 (L262D8R262U4BD10 (D4R32U4L32) U4) .

BD10 R |

REPRESENTS THE METAL RAMP WITH CONCRETE DECK THAT CON  
NECTS THE WD DK IN FRONT OF THE DOCK MASTERS AREA TO  
THE FLOATING DOCK GOING TOWARDS THE RIVERS END. BD9  
REPRESENTS THE CONC. FLOATING DOCK.

History Values	
Tax Year	Total Appraised Value

THUNDERBOLT MARINE INC  
PO BOX 5628

SAVANNAH

GA 31414-5628

Style	DRAW	Draw Only	Site Address: 003124 RIVER DR				
Class	DRAW	DRAW ONLY	BD13(128)12(640)BD11(1200)				Land Value 1,834,000
			132803434				Misc Value 1,453,500
			32BD14BD132BD134BD132BD18(192)				Bldg Value 2,642,000
							Total Value 5,929,500
			1 1 1 1 1				Value By Cost - Market Adj.
							Effective Area 0
							Points 0.0000
							Bldg Rate 0.00
							RCN 0
							% Depreciation 0.0700
							OBSOL 0.9300
							Building Value 0
							BOOK PAGE DATE QS SALE PRICE
							PERMIT NO TYPE DATE AMOUNT
			AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED
			BD11	1200	1.00	1200	1.00 1200 1200
			BD12	640	1.00	640	1.00 640 640
			BD13	128	1.00	128	1.00 128 128
			BD14	128	1.00	128	1.00 128 128
			BD15	128	1.00	128	1.00 128 128
			**Additional Subareas Exist, See Draw Summary Screen**				L100 M090 B100
			BD11(L150BD12(L80D8BD13(U4L32D4R32)R80U8)D8R22BD14(L4D				
			32R4U32)R28BD15(L4D32R4U32)R34BD16(L4D32R4U32)R32BD17(L				
			L4D34R4U34)R34BD18(L6D32R6U32)U8).				
			BD11 REPRESENTS MAIN WOOD FLOAT				
			ING DOCK BESIDE DOCK MASTERS BLDG. BD12 REPRESENT				
			S A CONCRETE FLOATING DOCK NEXT TO WOOD DK. BD13 IS				
			METAL RAMP W/CONCRETE DECK & HANDRAILS. BD14,15,16,17&				
			18 ARE ALL WOOD FLOATING DOCKS CON-NECTED TO MAIN WOOD				
			FLOATING DOCK.				

History Values

Tax Year Total Appraised Value

F 475.00 S 94502.00

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER

DR

Style	DRAW	Draw Only
Class	DRAW	DRAW ONLY

Land Value	1,834,000
Misc Value	1,453,500
Bldg Value	2,642,000
Total Value	5,929,500
Value By Cost - Market Adj.	

| 280 |

Effective Area	0
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33BD1 (3300)

Points	0.0000
--------	--------

Bldg Rate	0.00
-----------	------

RCN 0

* Depreciation	0.0700
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OBSOL	0.9300
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Building Value	0
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BOOK	PAGE	DATE	QS	SALE	PRICE
------	------	------	----	------	-------

| 5BD2 (300)

| 44BD3 (200)

PERMIT NO	TYPE	DATE	AMOUNT
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AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
17	17	17	17	17
18	18	18	18	18
19	19	19	19	19
20	20	20	20	20
21	21	21	21	21
22	22	22	22	22
23	23	23	23	23
24	24	24	24	24
25	25	25	25	25
26	26	26	26	26
27	27	27	27	27
28	28	28	28	28
29	29	29	29	29
30	30	30	30	30
31	31	31	31	31
32	32	32	32	32
33	33	33	33	33
34	34	34	34	34
35	35	35	35	35
36	36	36	36	36
37	37	37	37	37
38	38	38	38	38
39	39	39	39	39
40	40	40	40	40
41	41	41	41	41
42	42	42	42	42
43	43	43	43	43
44	44	44	44	44
45	45	45	45	45
46	46	46	46	46
47	47	47	47	47
48	48	48	48	48
49	49	49	49	49
50	50	50	50	50
51	51	51	51	51
52	52	52	52	52
53	53	53	53	53
54	54	54	54	54
55	55	55	55	55
56	56	56	56	56
57	57	57	57	57
58	58	58	58	58
59	59	59	59	59
60	60	60	60	60
61	61	61	61	61
62	62	62	62	62
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64	64	64	64	64
65	65	65	65	65
66	66	66	66	66
67	67	67	67	67
68	68	68	68	68
69	69	69	69	69
70	70	70	70	70
71	71	71	71	71
72	72	72	72	72
73	73	73	73	73
74	74	74	74	74
75	75	75	75	75
76	76	76	76	76
77	77	77	77	77
78	78	78	78	78
79	79	79	79	79
80	80	80	80	80
81	81	81	81	81
82	82	82	82	82
83	83	83	83	83
84	84	84	84	84
85	85	85	85	85
86	86	86	86	86
87	87	87		

BD1	3300	1.00	3300	1.00	3300	3300
-----	------	------	------	------	------	------

BD2	300	1.00	300	1.00	300	300
-----	-----	------	-----	------	-----	-----

BD3	200	1.00	200	1.00	200	200
-----	-----	------	-----	------	-----	-----

|Appraiser HC Harold Copeland

|L/Ins.Dte 02/06/97

Use Code 0002 COMMERCIAL

|NBHD 20600.00

L100 M090 B100

|BD1 (L10D280BD2 (L10D30R8BD3 (L5D40R5U40) R2U30) D50R10U330

1). BD1 & BD

| 2 REPRESENT CONCRETE FLOATING DOCKS BY ROAD TO REPAIR

|AREA. BD3      REPRESTENTS METAL RAMP FROM BD2 TO      LA

| ND.

History Values

Tax Year	Total Appraised Value
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		SAVANNAH		GA 31414-5628	
Style	DRAW	Draw Only	Site Address: 003124 RIVER		DR
Class	DRAW	DRAW ONLY			
			<div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto;"></div>		
			131BD6 (1088)		
			<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> + 103 96 </div> <div style="text-align: center;"> + BD4 (2073) </div> <div style="text-align: center;"> +-----64-----+-----40-----+ BD5 (114)  +-----104-----+ </div> </div>		
					Land Value 1,834,000 Misc Value 1,453,500 Bldg Value 2,642,000 Total Value 5,929,500 Value By Cost - Market Adj.  Effective Area 0 Points 0.0000 Bldg Rate 0.00 RCN 0 % Depreciation 0.0700 OBSOL 0.9300 Building Value 0
					BOOK PAGE DATE QS SALE PRICE
					PERMIT NO TYPE DATE AMOUNT
			AREA FLAT EFF% E/AREA ACT% A/AREA EA/AA HEATED		
			BD6 1088 1.00 1088 1.00 1088 1088		
			BD4 2073 1.00 2073 1.00 2073 2073		Appraiser HC Harold Copeland
			BD5 114 1.00 114 1.00 114 114		L/Ins.Dte 02/06/97
					Use Code 0002 COMMERCIAL
					NBHD 20600.00
					L100 M090 B100
			BD6 (L8D136R8BD4 (L64N48W91D10S47E84S1E7R104U4BD5 (U3R38D 3L38)U6L40)U136).		
			BD4 IS CONCRETE FLOATING DOCK CONNE CTED TO BD1. BD5 IS METAL RAMP/GANGWAY FROM BD4 (CO NCRETE FLOATING DOCK) TO THE SYNCRO-LIFT PLATFORM. BD 6 IS CONCRETE FLOATING DOCK ATTACHED TO BD4		

History Values  
Tax Year Total Appraised Value

F 475.00 S 94502.00

SAVANNAH

GA 31414-5628

[illegible]







SAVANNAH GA 31414-5628

Site Address: 003124 RIVER DR

Section 14	Gar-Ind-Lof	30								Land Value	1,834,000
Business Code 1415	Manuf Lt Lw									Misc Value	1,453,500
Quality/Class 45	Low Class									Bldg Value	2,642,000
Quality Fact 4	Minus 10%									Total Value	5,929,500
Exterior Wall MTL	Metal	52GFA(1560)								Value By Cost - Market Adj.	
Stories 00	N/A										
Av Hght / Story 12	12' Wall Hg										
Avg Floor Area 4000	300 Multip										
Avg Perimeter 300	Av. Pmtr =	30								Effective Area	3,660
Unit Multiplier 0000	N/A									Points	0.0000
Basement										Bldg Rate	15.47
Mezzanine										RCN	56,627
Heating Only										% Depreciation	0.8000
Heat/Air System										OBSOL	0.0000
Air Cond. Only		70GFA(2100)								Building Value	11,330
B/I Allowance											
Balcony \$/sf. 000000										BOOK PAGE DATE QS SALE PRICE	
Elevator \$/sf. 000000											
Sprinklers											
Cost Multiplier S	CLASS S										
Local Multiplier S	Savannah	30								PERMIT NO TYPE DATE AMOUNT	
Actual Year Blt 1940		AREA FLAT EFF% E/AREA ACT% A/AREA EA/AA HEATED									
Eff. Year Built 0000											
Normal Depr Tbl 35	35-year Lif	GFA 3660 1.00 3660 1.00 3660 3660 3660									
Functional Obs.										Appraiser HC Harold Copeland	
Economic Obs.										L/Ins.Dte 02/06/97	
Observed Cond										Use Code 0002 COMMERCIAL	
Obsvd Cond Code										NBHD 20600.00	
											L100 M090 B100
		GFA(L30D70R30U70) GFA(U52L30D52R30).									
		BD10 - WORKSHOP (PJ's #102)									
		GFA 2100 sq.ft. is metal bldg. 12'hi. GFA 1560 sq.f									
		t. is conc. blk. addition									
History Values											
Tax Year Total Appraised Value											

F 475.00 S 94502.00

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER

DR

[illegible]

THUNDERBOLT MARINE INC

PO BOX 5628

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER DR

Section	14	Gar-Ind-Lof	30	100						Land Value	1,834,000
Business Code	1415	Manuf.lghtA	17							Misc Value	1,453,500
Quality/Class	35	Average Cla								Bldg Value	2,642,000
Quality Fact	3	Aver 1.00	POR(178)							Total Value	5,929,500
Exterior Wall	MTL	Metal								Value By Cost - Market Adj.	
Stories	01	01 Story									
Av Hght / Story	24	24' Wall Hg									
Avg Floor Area	14X	500 Multip		GFA(3000)	GFA(10000)	100					
Avg Permitter	500	Av. Pmtr =	GFA(1723)							Effective Area	14,723
Unit Multiplier	0000	N/A	68	78						Points	0.0000
Basement										Bldg Rate	26.85
Mezzanine										RCN	395,281
Heating Only										% Depreciation	0.6400
Heat/Air System										OBSOL	0.0000
Air Cond. Only			POR(175)							Building Value	142,300
B/I Allowance			25	30	100						
Balcony \$/sf.	000000									BOOK PAGE DATE QS SALE PRICE	
Elevator \$/sf.	000000										
Sprinklers											
Cost Multiplier	S	CLASS S									
Local Multiplier	S	Savannah								PERMIT NO TYPE DATE AMOUNT	
Actual Year Blt	1969		AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA	HEATED			
Eff. Year Built	1971										
Normal Depr Tbl	35	35-year Lif	GFA	14723	1.00	14723	1.00	14723	14723		
Functional Obs.	000000		POR	353	1.00	353	1.00	353	353	Appraiser HC Harold Copeland	
Economic Obs.	000000									L/Ins.Dte 02/06/97	
Observed Cond	000000									Use Code 0002 COMMERCIAL	
Obsvd Cond Code										NBHD 20600.00	
										L100 M090 B100	
			GFA(L100GFA(L30D17POR(L25D8R10E15N3U5)D5GFA(W15S3L10D6								
			8R25POR(L25D7R25U7)U71)D78R30U100)D100R100U100).								
			BD8 - WAREHOUSE (PJ'S #101).								
			American brand steel bldg.					No exterior wall			
			on rear 80' of 10,000sq. ft. bldg. - see misc. item #								
			12. GFA 1723 sq.ft. is 14'hi; GFA 3000 sq.ft. is 20'								
			hi; GFA 10,000sq.ft. is 26'hoverall height of 24'.								
			1996 Remodeled 1723 sq.ft for showroom & 2								
			280 sq.ft. of 3000 area for office& training room.								

## History Values

Tax Year Total Appraised Value

F 475.00 S 94502.00

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER

DR

Section	14	Gar-Ind-Lof		┌30┐								Land Value	1,834,000
Business Code	1415	Manuf.lghtA										Misc Value	1,453,500
Quality/Class	35	Average Cla										Bldg Value	2,642,000
Quality Fact	3	Aver 1.00										Total Value	5,929,500
Exterior Wall	MTL	Metal										Value By Cost - Market Adj.	
Stories	00	N/A											:
Av Hght / Story	40	40' Wall Hg											:
Avg Floor Area	4000	350 Multip											:
Avg Perimeter	350	Av. Pmtr =										Effective Area	4,200
Unit Multiplier	0000	N/A										Points	0.0000
Basement						140GFA(4200)						Bldg Rate	44.16
Mezzanine												RCN	185,485
Heating Only												% Depreciation	0.2900
Heat/Air System												OBSOL	0.0000
Air Cond. Only												Building Value	131,690
B/I Allowance													
Balcony \$/sf.	000000											BOOK PAGE DATE QS SALE PRICE	
Elevator \$/sf.	000000												
Sprinklers													
Cost Multiplier S		CLASS S											
Local Multiplir S		Savannah				└30┘						PERMIT NO TYPE DATE AMOUNT	
Actual Year Blt	1986			AREA	FLAT	EFF% E/AREA	ACT% A/AREA	EA/AA HEATED					
Eff. Year Built	0000												
Normal Depr Tbl	30	30-year Lif		GFA	4200	1.00	4200	1.00	4200	4200	4200		
Functional Obs.	000000												Appraiser HC Harold Copeland
Economic Obs.													L/Ins.Dte 02/06/97
Observed Cond													Use Code 0002 COMMERCIAL
Obsvd Cond Code													NBHD 20600.00

F 475.00 S 94502.00









## SAVANNAH

GA 31414-5628

Site Address:

23	15	CAN14S0	CAN STY 14 ST CH	.00	.00	600.00	6.75	00	25.00	.90	3,040
24	16		LACK OF WALL	90.00	35.00	3150.00	3.53	1972 35	61.00	.90	4,330-
25	16	NINOFA	NO OFFICE SPACE	.00	.00	1575.00	22.85	1972 35	61.00	.90	14,040-
26	19	NINOFA	NO OFFICE SPACE	.00	.00	1525.00	22.85	1992 40	7.00	.90	32,410-
27	14		RAILWAY	.00	.00	1500.00	38.70	00	50.00	.90	29,030
28	1	ASPAV	ASPHALT PAVE 300	.00	.00	175000.00	1.13	00	50.00	.90	98,440
29	1	CONPAV	CONCRETE PAVE 30	.00	.00	25000.00	2.12	00	25.00	.90	39,660
30	0		CONCRETE SEAWALL	.00	.00	1008.00	303.75	00 OC	20.00	.90	244,940
31	0		METAL SEAWALL	.00	.00	14400.00	15.75	00 OC	20.00	.90	181,440
32	0		PILING FOR METAL	.00	.00	2520.00	19.99	00 OC	20.00	.90	40,300
33	0		SETUP & DISMANTL	.00	.00	1.00	7425.00	00 OC	0.01	.90	7,420
34	0		CONCRETE SEAWALL	.00	.00	537.00	303.75	00	20.00	.90	130,490
35	0	FLDOCK2L	Float Dock 2"Lt	370.00	10.00	3700.00	15.49	00	50.00	.81	28,650
36	0		RAMP/GANGWAY	24.00	4.00	96.00	13.50	00	30.00	.90	910
37	0		HANDRAILS	.00	.00	24.00	14.40	00	30.00	.90	240
38	0	FLDOCK2L	Float Dock 2"Lt	.00	.00	2048.00	15.49	00	50.00	.81	15,860
39	0	FLDOCK2M	Float Dock 2"Lt	.00	.00	2208.00	31.38	00	20.00	.90	55,440
40	0		RAMP (WOOD)	.00	.00	60.00	8.33	00	50.00	.90	250
41	0		HANDRAILS	.00	.00	20.00	11.34	00	50.00	.81	110
42	0		RAMP CONCRETE DE	.00	.00	110.00	18.90	00	20.00	.90	1,660
43	0		HANDRAILS	.00	.00	22.00	14.40	00	20.00	.90	250
44	0	FLDOCK2M	Float Dock 2"Lt	.00	.00	2096.00	31.38	00	20.00	.90	52,620
45	0		RAMP	.00	.00	128.00	18.90	00	20.00	.90	1,940
46	0		HANDRAILS	.00	.00	32.00	14.40	00	20.00	.90	370
47	0	FLDOCK2L	Float Dock 2"Lt	.00	.00	1912.00	17.21	00	50.00	.90	16,450
48	0	FLDOCK2M	Float Dock 2"Lt	.00	.00	640.00	31.38	00	20.00	.90	16,070
49	0		RAMP CONCRETE	.00	.00	128.00	18.90	00	20.00	.90	1,940
50	0	FLDOCK2M	Float Dock 2"Lt	.00	.00	3600.00	31.38	1992 20	26.00	.90	83,600
51	0		METAL RAMP	.00	.00	200.00	20.70	1992 20	26.00	.90	3,060
52	0		HANDRAILS	.00	.00	40.00	14.40	1992 20	26.00	.90	430
53	0	FLDOCK2M	Float Dock 2"Lt	.00	.00	3161.00	31.38	1992 20	26.00	.90	73,410
54	0		METAL RAMP LOW Q	.00	.00	114.00	15.75	1992 20	26.00	.90	1,330
55	0		HANDRAIL	.00	.00	38.00	12.60	1992 20	26.00	.90	350
56	0	FLDOCK2M	Float Dock 2"Lt	.00	.00	512.00	31.38	1992 20	26.00	.90	11,890
57	0		STADDLE TRUCK TR	.00	.00	1080.00	74.25	1992 50	4.00	.90	76,980
58	0	FLDOCK2M	Float Dock 2"Lt	.00	.00	3648.00	31.38	1992 20	26.00	.90	84,720
59	0		METAL PLATFORM	.00	.00	104.00	20.70	1992 20	26.00	.90	1,590
60	0		METAL RAMPS	.00	.00	300.00	20.70	1992 20	26.00	.90	4,600
61	0		HANDRAILS	.00	.00	60.00	14.40	1992 20	26.00	.90	640
62	9	XINOFA	EXCESS IND OFF A	.00	.00	2956.00	26.74	1996 35	4.00	.99	75,880
63	0	FLDOCK2M	Float Dock 2"Lt	.00	.00	3000.00	31.38	1996 20	10.00	.90	84,730

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER

DR

Section 13	Store-Comme		25							Land Value	1,834,000
Business Code 1330	Retail Low			10						Misc Value	1,453,500
Quality/Class 44	Low Class									Bldg Value	2,642,000
Quality Fact 3	Aver 1.00									Total Value	5,929,500
Exterior Wall SID	Siding/Shin									Value By Cost - Market Adj.	
Stories 00	N/A		33	GFA(825)	33						
Av Hght / Story 10	10' Wall Hg					35					
Avg Floor Area 1000	100 Multipl										
Avg Permitter 100	Av. Pmtr =									Effective Area	825
Unit Multiplier 0000	N/A									Points	0.0000
Basement				CAN(1227)						Bldg Rate	31.55
Mezzanine				25						RCN	26,029
Heating Only						10				% Depreciation	0.5700
Heat/Air System			13							OBSOL	0.0000
Air Cond. Only										Building Value	11,190
B/I Allowance			15			16					
Balcony \$/sf. 000000										BOOK PAGE DATE QS SALE PRICE	
Elevator \$/sf. 000000			16								
Sprinklers						11					
Cost Multiplier D	CLASS D					8					
Local Multiplier S	Savannah					29				PERMIT NO TYPE DATE AMOUNT	
Actual Year Blt 1969			AREA	FLAT	EFF%	E/AREA	ACT%	A/AREA	EA/AA	HEATED	
Eff. Year Built 0000											
Normal Depr Tbl 40	40-year Lif	GFA	825	1.00	825	1.00	825	825	825		
Functional Obs.		CAN	1227	1.00	1227	1.00	1227	1227			
Economic Obs.										Appraiser HC Harold Copeland	
Observed Cond										L/Ins.Dte 02/06/97	
Obsvd Cond Code										Use Code 0002 COMMERCIAL	
										NBHD 20600.00	

L100 M090 B100

GFA(L25D33R25U33)ADD(D3)CAN(R10D35L10D16L11D8L29U16R15  
U13R25U30).

BD3 - MARINA STORE

Frame bldg. with window a/c and large cove  
red deck connecting it to BD4. and misc item #5.

## History Values

Tax Year	Total Appraised Value
93	2,415,030
92	1,906,700

F 475.00 S 94502.00

SAVANNAH

GA 31414-5628

Site Address: 003124 RIVER

DR

Section	13	Store-Comme		+--8--+					Land Value	1,834,000
Business Code	1330	Retail Av							Misc Value	1,453,500
Quality/Class	34	Average Cla	19		16				Bldg Value	2,642,000
Quality Fact	3	Aver 1.00 }							Total Value	5,929,500
Exterior Wall	SID	Siding/Shin							Value By Cost - Market Adj.	
Stories	00	N/A	+		+					
Av Hght / Story	10	10' Wall Hg								
Avg Floor Area	1000	100 Multipl								
Avg Permitter	100	Av. Pmtr =							Effective Area	480
Unit Multiplier	0000	N/A							Points	0.0000
Basement			20	GFA(480) 40	CAN(670) 20				Bldg Rate	42.58
Mezzanine									RCN	20,436
Heating Only									% Depreciation	0.4000
Heat/Air System									OBSOL	0.0000
Air Cond. Only									Building Value	12,260
B/I Allowance		+			+					
Balcony \$/sf.	000000								BOOK PAGE DATE QS SALE PRICE	
Elevator \$/sf.	000000		19		17					
Sprinklers										
Cost Multiplier D	CLASS D									
Local Multiplr S	Savannah			+--6--+					PERMIT NO TYPE DATE AMOUNT	
Actual Year Blt	1969	AREA FLAT EFF% E/AREA ACT% A/AREA EA/AA HEATED	8						CM 0296	100,000
Eff. Year Built	1975									
Normal Depr Tbl	40	40-year Lif GFA	480	1.00	480	1.00	480	480	480	
Functional Obs.	000000	CAN	670	1.00	670	1.00	670	670	Appraiser HC Harold Copeland	
Economic Obs.	000000								L/Ins.Dte 02/06/97	
Observed Cond	000000								Use Code 0002 COMMERCIAL	
Obsvd Cond Code									NBHD 20600.00	

## History Values

Tax Year	Total Appraised Value
96	5,906,340
95	6,202,920
94	5,033,380

MISC	BLDG	CODE	DESC	LENGTH	WIDTH	UNITS	ADJ PRICE	EYB	DT	PCT	ADJUSTMENT	VALUE
7	4	OB90	Storage Building	.00	.00	264.00	8.10	00		25.00	.90	1,600
8	4	OB90	Storage Building	.00	.00	192.00	8.10	00		25.00	.90	1,170
9	5	CAN15F1	CAN STY 15 FR LO	.00	.00	116.00	12.38	1960	40	78.00	.90	320
10	6		GUARD HOUSE	.00	.00	48.00	83.48	00		20.00	.90	3,210
11	7	CAN13F2	CAN STY 13 FR AV	.00	.00	780.00	14.40	1972	35	61.00	.90	4,380
12	8		LACK OF SIDING	.00	.00	2080.00	3.53	1969	35	72.00	.90	2,060-
13	9	NINOF A	NO OFFICE SPACE	.00	.00	504.00	22.85	1986	30	29.00	.90	8,180-
14	12	CONPAV	CONCRETE PAVE 30	.00	.00	2880.00	2.30	00		25.00	.90	4,980
15	12		LACK OF WALLS	144.00	40.00	5760.00	3.53	1974	35	55.00	.90	9,140-
16	12	NINOF A	NO OFFICE SPACE	.00	.00	1830.00	22.85	1974	35	55.00	.90	18,820-
17	13	OB90	Storage Building	.00	.00	32.00	8.10	00		20.00	.90	210
18	13	CAN14S0	CAN STY 14 ST CH	45.00	50.00	2250.00	6.75	00		35.00	.90	9,870
19	14	OB90	Storage Building	16.00	31.00	496.00	8.10	00		20.00	.90	3,210
20	14		GUARD HOUSE	8.00	10.00	80.00	8.10	00		20.00	.90	520
21	14	OB90	Storage Building	10.00	12.00	120.00	8.10	00		25.00	.90	730

Reference 14

PROPERTY TRANSACTION, EXCAVATION,  
AND VERIFICATION SAMPLING  
LOCKHEED SHIPBUILDING  
SAVANNAH DIVISION

FEBRUARY 16, 1989



*McLaren Environmental Engineering*

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PROPERTY TRANSACTION ENVIRONMENTAL  
ASSESSMENT, EXCAVATION, AND VERIFICATION  
SAMPLING - LOCKHEED SHIPBUILDING  
SAVANNAH DIVISION - FEBRUARY 16, 1989

## INTRODUCTION

This report presents the results of the excavation and cleanup verification sampling activities conducted at Lockheed Shipbuilding Savannah, Georgia. The areas excavated and sampled were identified in the report, "Property Transaction Environmental Assessment and Verification Sampling, Lockheed Shipbuilding Savannah Division, September 7, 1988", is included as Appendix C. The environmental assessment and verification sampling program was conducted during June, July, and August, 1988.

The assessment and sampling was conducted in two phases. Phase I consisted of an initial site survey and design of a baseline sampling program for the site. The site survey included employee and regulatory staff interviews, and review of city, county, state and federal regulations and permits. As stated in the report, ten areas of environmental concern were identified during the site survey. Phase II, a baseline sampling program, was conducted to investigate the ten areas. The sampling program consisted of asbestos sampling, soil sampling, groundwater monitor well construction, water quality sampling, and marine sediment sampling. Sampling protocols, samples collected and analytical data were presented in the September, 1988 report.

The September 7, 1988 report concluded that Lockheed's operations at the site over the past three years have had little environmental impact with the exception of the sandblast grit and the presence of asbestos in the floor tiles of Building 101.

## BACKGROUND

This report discusses the excavation of material from three areas identified in the September 7, 1988 report as having minor environmental concern. The three areas are the crane parking and repair area, a topographically low area behind Building 202 and an oil stained area resulting from air compressor leakage near Building 203. A summary of the Phase II sampling conducted at each area and analytical results is presented below.

### Crane Parking and Repair Area

Hydraulic oil and diesel leaking from heavy machinery stored in the eastern section of the south yard were identified during the Phase I investigation. Three hand auger soil borings were drilled around the approximate area of subassembly platen 5 on bare soil in a triangular pattern (see Figure 1). Soil samples were collected near the surface at each location. The soil samples were analyzed for hydrocarbons using EPA Method 8020. Ethylbenzene was detected from two locations at 0.1 ppm while total xylene was detected in samples from all three borings at concentrations ranging from 0.17 ppm to 1.04 ppm. The detected chemicals were at concentrations less than the EPA designated level to protect marine waters.

### Low Area Behind Building 202

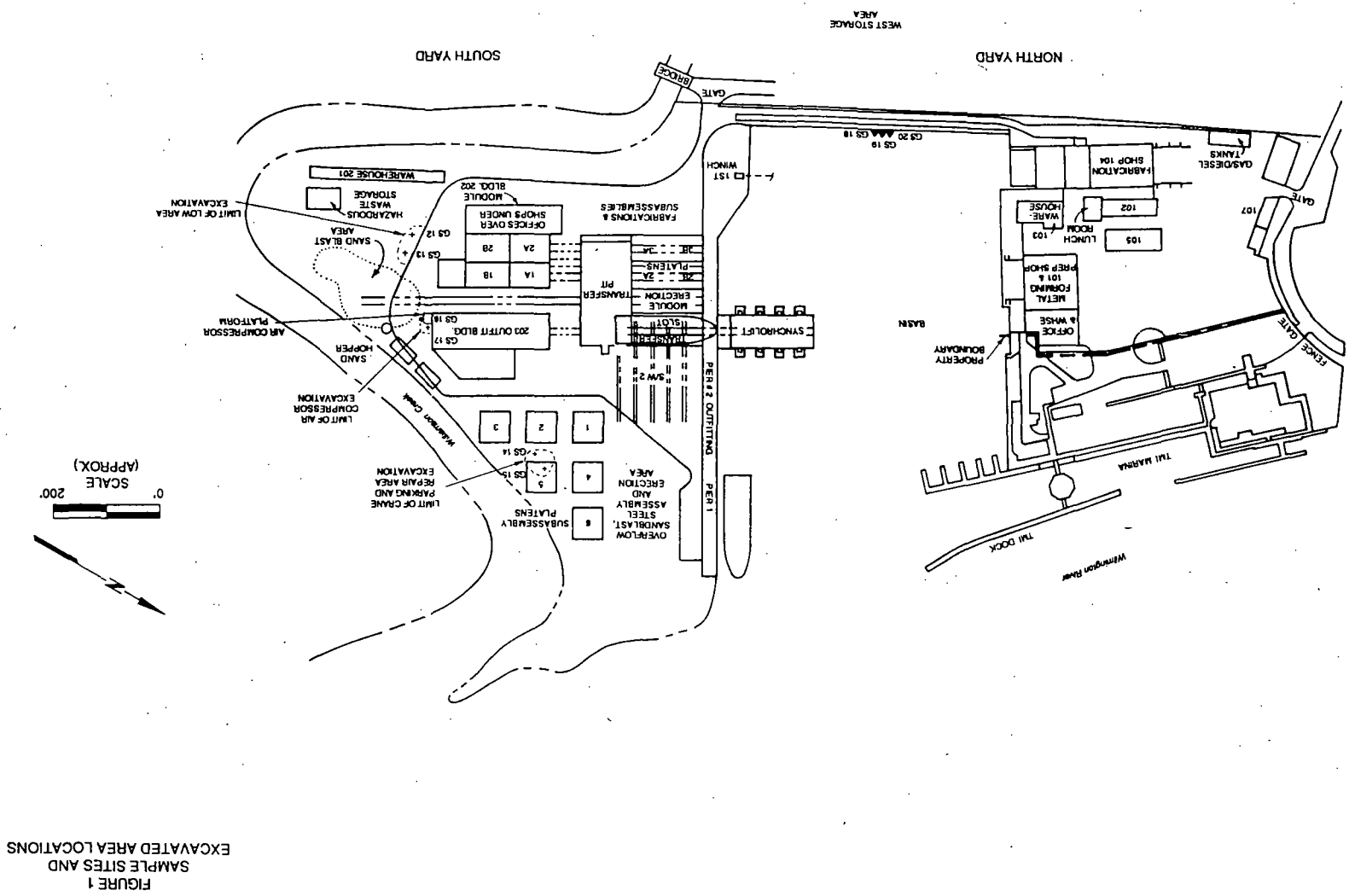
Dark soil stains south of the machine shop in Building 202 were identified as areas of potential environmental concern during the Phase I investigation. Surface drainage from the machine shop in Building 202 flows south, then splits and drains towards two areas. The first is a low point formed in a traffic area, and the second is a bare soil surface drainage way leading to a storm drain. Two hand auger borings were drilled in the unpaved area.

One hand auger boring was drilled in the low area behind Building 202 to a depth of 3 feet below ground surface. One soil sample was collected at the 3 foot interval and analyzed for fuel hydrocarbons using EPA Method 8020. Strong hydrocarbon odors were noted in the soil from the surface to approximately 1 foot below grade but no chemicals were detected at the three foot depth.

One hand auger boring was drilled at the edge of the asphalt in the drainage path to the storm drain inlet. The boring was augered to a total depth of three feet below ground surface. Soil samples were collected at 0.5 feet and 2.5 feet below ground surface and analyzed for solvents and fuel hydrocarbons. Chemicals were detected at the 0.5 foot interval and included 0.2 ppm ethylbenzene and 0.15 ppm total xylene. The detected chemicals were at concentrations less than the EPA designated level to protect marine waters.

### Air Compressor Leakage

The Phase I investigation identified oil leaking from an air compressor outside of Building 203. The Phase II verification sampling consisted of a hand auger boring through asphalt approximately 4 feet from the air compressor platform. No chemicals were detected in a sample collected just underneath the asphalt.



## SCOPE OF SERVICES

The purpose of the remediation activities and supplemental soil sampling discussed in this report was to 1) excavate possible chemical containing soil identified in three areas, 2) dispose of the excavated material and 3), resample the marine sediment along the seawall, in the vicinity of the previous GS2 sample location, as requested by Trinity Marine.

The specific scope of services was as follows:

- . Collect composite soil samples from the three identified areas prior to excavation. The three samples were analyzed for EP Toxicity Metals and total petroleum hydrocarbons (TPH). The results were sent to the Hazardous Waste Unit of the Georgia Environmental Protection Division (EPD) for approval to dispose of the excavated material at a Class 3 sanitary landfill in Savannah.
- . Excavate, using a front end loader, the bare soil of the low area behind Building 202 and the crane parking area. Total depth and lateral extent of the excavation was based on visual inspection by a McLaren Engineering representative on-site with follow-up verification sampling discussed below.
- . Excavate asphalt surrounding the air compressor that has signs of oil impregnation and any affected underlying road base material. The excavation was conducted using a backhoe. Total depth and lateral extent of the excavation was based on visual inspection with follow-up verification sampling discussed below.
- . Collect soil samples from the floor of the excavation at two points from each of three areas. Samples were analyzed for petroleum hydrocarbons by EPA Method 8015 (modified) and total volatile aromatics (TVA) by EPA Method 8020 to assure that the full extent of the petroleum hydrocarbon containing soil had been excavated.
- . If the excavations exceed a depth of 2.5 inches, fill the two bare soil areas with clean fill material and replace road base material, if needed, and lay fresh asphalt around the air compressor.
- . Collect a sample of the replacement fill material for petroleum hydrocarbon and TVA analyses.
- . Collect three marine sediment samples in the vicinity of GS2 for metal analyses.

Collect two one-quart samples from the waste bins containing the excavated material to send to two hazardous waste disposal sites for waste profile analyses. The two hazardous waste disposal areas were alternative disposal sites if approval to dispose the material at a Class Three landfill in Savannah was denied.

#### Pre-Excavation Sampling

Prior to initiation of excavation activities, samples were to be collected from each of the three areas identified in the September 7, 1988, report as having minor environmental concern (Table 1). However, due to asphalt cover, samples were not collected from the air compressor area. Samples for EP Toxicity Metals were collected from five or six locations in each area, placed into a 500-ml wide mouth glass jar and composited. Samples for TPH analyses were collected from the same locations as above and placed into a plastic 500-ml wide mouth jar. The samples were collected using a metal scoop at about 2 to 4 inches below ground surface. The samples were delivered to Savannah Laboratories and Environmental Services, Inc. in Savannah, Georgia for Extract Procedure (EP) Metals (EPA Methods 1310 and 7470) and TPH (IR Method) analyses.

Petroleum hydrocarbons were detected at 270 and 740 ppm from the low area behind Building 202 and the crane parking area, respectively. Cadmium was detected at 0.063 mg/l and lead was detected at 0.26 mg/l in the composite soil sample collected from the low area. Barium was detected at 0.42 mg/l in the sample from the crane parking area. Table 2 presents the results of the TPH and EP Toxicity analyses. Laboratory data sheets and chain-of-custody sheets are contained in Appendix A. When the analytical results were discussed with the Georgia EPD, they tentatively approved disposal at the Class Three site in Savannah, but a formal request with sample analyses was required prior to disposal.

#### Excavation

Excavation of the low area behind Building 202, the crane parking area, and the air compressor area was performed by Bashlor Trucking using a backhoe equipped with a front end loader. Material excavated was temporarily stockpiled adjacent to the excavation until transfer to a waste bin. The waste bins were 24 cubic yard roll-off bins. The bins were open top with rainproof tarps or closed tops. The bins are U.S. Department of Transportation approved for hazardous waste transport and were provided by Bryson Industries.

The extent of the excavation depended on visual and olfactory inspection by the McLaren representative on-site. Visual evidence indicating petroleum contamination is soil with a black to gray and dark gray to green color. Olfactory evidence is a musty petroleum product smell. At the low area, near Building 202, excavation extended .5 foot to 1 foot in depth to a white sand layer and at the crane parking area excavation extended to a bright orange silty sand layer at about .4 to 1 foot. Approximately 15 cubic yards was excavated from the low area and about 20 cubic yards was removed from the crane parking area. The asphalt removed

TABLE 1  
SAMPLE LOCATION, DESCRIPTION, AND TYPE OF ANALYSIS

Location	Type of Sample Analysis					Comments
	EP Toxicity Metals	TPH	8015	8020	Metal	
--- <sup>a</sup>	1 <sup>b</sup>	1				Low area behind Building 202. Pre-excavation.
--- <sup>a</sup>	1	1				Crane parking area. Pre-excavation.
GS12 <sup>c</sup>			1	1		Low area behind Building 202. Post-excavation.
GS13			1	1		Low area behind Building 202. Post-excavation.
GS14			1	1		Crane parking area. Post-excavation.
GS15			1	1		Crane parking area. Post-excavation.
GS16			1	1		Air compressor. Post-excavation.
GS17			1	1		Air compressor. Post-excavation.
GS18					1	Grab sample. Marine sediments.
GS19					1	Grab sample. Marine sediments.
GS20					1	Grab sample. Marine sediments.
Waste Bins						Two grab samples to be sent to hazardous waste disposal locations.

<sup>a</sup>Composite sample.

<sup>b</sup>Numbers describe the type of samples collected.

<sup>c</sup>GS12 is grab sample 12.

TABLE 2  
LOCKHEED SHIPBUILDING SAVANNAH DIVISION  
PRE-EXCAVATION SOIL ANALYTICAL DATA

<u>Chemical</u>	<u>Locations</u>		
	<u>Low Area Bldg. 202</u>	<u>Air Compressor</u>	<u>Crane Parking &amp; Repair Area</u>
Petroleum Hydrocarbons mg/kg dw (IR, EPA-SW-846)	270	NS	740
EP Toxicity Metals mg/l (SW846-1310)			
Arsenic	<0.20	NS	<0.20
Barium	<0.050	NS	0.42
Cadmium	0.063	NS	<0.010
Chromium	<0.050	NS	<0.050
Lead	0.26	NS	<0.20
Selenium	<0.50	NS	<0.50
Silver	<0.010	NS	<0.010
Mercury (7470)	<0.002	NS	<0.002

NS - Not Sampled

around the air compressor was saturated with oil, however, except for a six-inch by two-foot section immediately adjacent to the air compressor platform, the oil had not penetrated to the underlying road base material. The affected material was dug out to a depth of three to four inches. The resulting holes were backfilled by using the surrounding clean fill.

Two samples were collected from each excavated area. The samples were collected using a cleaned metal trowel and placed into six-inch long, clean brass tubes and sealed with teflon liners, poly caps, and electrical tape. The sample tubes were kept in a thermally insulated chest with ice and delivered under chain-of-custody to McLaren Analytical Laboratory (MAL) in Rancho Cordova, California.

The excavated areas were backfilled because the depth of removal was greater than 2.5 inches. The fill material was collected from a pit located on Tybee Island, Georgia and was similar in composition and texture to the original material. The fill was sampled as described above for petroleum hydrocarbon and TVA analyses. Commercial asphalt was used to fill in the excavated area around the air compressor.

Two soil samples were collected in three 12-oz glass jars, for submittal to the alternate hazardous waste disposal areas. The samples were delivered under chain-of-custody to MAL for storage until submitted if required.

The six samples collected from the excavations and the one fill sample, were analyzed for petroleum hydrocarbons by EPA Method 8015 (Modified) and TVA by EPA Method 8020. Petroleum product and TVA were not detected in any sample except for the sample at GS17, which had a low positive result. Quantification of the compound detected in the sample collected at GS17 was beyond the scope of the method. However, study of the chromatogram produced showed that the compound was in the range of heavy, tarry substances such as asphalt. The sample consisted of road base material and likely contained particles of the overlying asphalt layer broken off during the excavation process. Results of the soil sample analyses are presented in Table 3.

Based on the results of the analyses, it is concluded that all of the petroleum contaminated soil in each of the areas had been excavated, and no further action was required.

#### **SEDIMENT SAMPLES**

Three sediment samples were collected from the basin at 10 foot intervals along the seawall near the Phase II GS2 sampling location. The sediment samples were collected with a core sampler containing one 6-inch long brass tube and equipped with a plastic sample catcher. The core sampler was forced into the sediment to a depth of 6 to 8 inches. The sample was extruded from the 6-inch tube into a polyethylene bag with a reclosable top. Sediment samples were analyzed for heavy metals.

TABLE 3  
LOCKHEED SHIPBUILDING, SAVANNAH DIVISION  
POST-EXCAVATION SOIL ANALYTICAL DATA

<u>Location</u>	<u>Description</u>	<u>Petroleum Hydrocarbons (8015 Modified)</u>		<u>Total Volatile Aromatics 8020</u>			
		<u>Gasoline</u>	<u>Diesel</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylene</u>	<u>Ethylbenzene</u>
GS12 <sup>a</sup>	Low area behind Building 202	ND	ND	ND	ND	ND	ND
GS13	Low area behind Building 202	ND	ND	ND	ND	ND	ND
GS14	Crane parking area	ND	ND	ND	ND	ND	ND
GS15	Crane parking area	ND	ND	ND	ND	ND	ND
GS16	Air compressor	ND	ND	ND	ND	ND	ND
GS17	Air compressor	ND <sup>b</sup>	ND <sup>b</sup>	ND	ND	ND	ND
Fill	Fill material used	ND	ND	ND	ND	ND	ND

<sup>a</sup>GS12 is grab sample 12

<sup>b</sup>Late elating oil or grease. Low positive results. Maybe tarry substance such as asphalt.

ND - Not detected

Antimony, arsenic, beryllium, cobalt, copper, lead, mercury, nickel, selenium, vanadium, and zinc were detected in the marine sediments. However, heavy metals are naturally occurring in soil and detected levels were well below the EPA designated levels to protect marine waters. Table 4 presents a complete list of the results and EPA guideline concentrations. The occurrence of chromium in marine sediments does not require any further action because the average of chromium concentrations in sediment samples collected at locations GS2, GS18, GS19, and GS20 is 17.5 ppm, which is below the EPA guideline level of 20 ppm and is not significantly higher than the average of all the basin samples.

#### DISPOSAL OF EXCAVATED MATERIAL

Permission to dispose of the waste material at the Savannah Sanitary landfill was requested from the Georgia EPD on January 6, 1989. Authorization to dispose of the excavated material in a sanitary landfill was granted by Howard Barefoot, Unit Coordinator, Georgia EPD Site Investigation Program on February 3, 1989 (see Appendix B). Mr. Barefoot stated that the material was not hazardous and could be disposed in any permitted sanitary landfill. On February 9 and 10, 1989, the excavated material was transported and disposed of at the Savannah Sanitary Landfill on Dean Forest Road.

#### SUMMARY

Approximately 45 cubic yards of material was excavated from three areas of the Lockheed, Savannah Shipbuilding yard. Analyses of samples collected from the excavated areas showed that all petroleum contaminated soil had been excavated, and no further action was required. The excavated material was disposed of at the Savannah Sanitary Landfill, by permission of the Georgia EPD.

Three additional sediment samples were collected from the ship turning basin because of elevated chrome concentration detected in samples collected during the initial site investigation. The results of heavy metal analyses showed that the concentration of chrome detected is less than the EPA guideline level and is not significantly higher than the average of all the basin samples. Therefore, the occurrence of chromium in marine sediments does not require further action.

TABLE 4  
LOCKHEED SHIPBUILDING, SAVANNAH DIVISION  
MARINE SEDIMENT ANALYTICAL DATA

<u>Metals/Date</u>	<u>Location</u>				<u>Designated Level to Protect Marine Waters</u>
	<u>GS2 (07/25/88)</u>	<u>GS18 (12/29/88)</u>	<u>GS19 (12/29/88)</u>	<u>GS20 (12/29/99)</u>	
Antimony	5	6	8	8	NL
Arsenic	1	4	4	3	80
Barium	ND	ND	ND	10	NL
Beryllium	ND	ND	0.5	0.5	NL
Cadmium	ND	ND	ND	ND	30
Chromium	21	10	19	20	20
Cobalt	6	20	3	4	NL
Copper	71	20	29	76	290
Lead	51	20	30	48	56
Mercury	0.24	0.09	0.03	0.2	0.25
Molybdenum	ND	ND	ND	ND	NL
Nickel	10	5	8	9	83
Selenium	ND	0.1	0.1	0.2	540
Silver	ND	ND	ND	ND	NL
Thallium	20	ND	ND	ND	NL
Vanadium	10	8	20	20	NL
Zinc	240	38	41	79	2000

ND = Not detected

NL = Not listed

# McLaren Analytical Laboratory

## Chain of Custody Record

No 206602

L.P. 1127 #5AP

Keith McIntyre

PROJECT DESIGNATION Lockheed, GA

SAMPLES TAKEN BY: Keith McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
	Excavated Material Waste Bins	12-29-88			X	040758 <del>040758</del> 040759 <del>040759</del>	8oz glass jar <del>Archive (To be sent to State Agency)</del>	
	GS # 12	12-28-88				003598	6" brass tube	19085 8015 8020 (19086)
	GS # 13	12-28-88				003599		(19087) (19088)
	Fill	12-28-88				003600 004 km		(19089) (19090)
	GS # 14	12-28-88				040751		(19091) (19092)
	GS # 15	12-28-88				040752		(19093) (19094)
	GS # 16	12-29-88				040753		(19095) (19096)
	GS # 17				↓	040754	↓	(19097) (19098)
	GS # 18				X	040755	poly bag	CAM Metals (19099)

FIELD DISPOSITION: A sample container came in broken. Only part of the soil was saved in another glass container.

IMMEDIATE DELIVERY ☒ STORAGE ☐ REFRIGERATOR ☐ ID ☐ FREEZER ☐ ID ☐

SECURED ☐ YES ☐ NO

RELINQUISHED BY: Keith McIntyre RECEIVED BY: \_\_\_\_\_ DATE TIME 12-29-88 1530

RELINQUISHED BY: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_ DATE TIME \_\_\_\_\_

RECEIVED FOR LABORATORY BY: Michael A. Neuenburg DATE TIME 12/30/88 10:05

METHOD OF SHIPMENT:

FED EX

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

**SAMPLES RECEIVED IN GOOD CONDITION**

REFRIGERATOR ☐ ID \_\_\_\_\_

FREEZER ☐ ID \_\_\_\_\_

CABINET ☐ ID \_\_\_\_\_

SECURE

☐

YES ☐

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

209270

L.P. 1127

Keith

SAMPLES TAKEN BY: Keith McIntyre McIntyre

**FIELD DISPOSITION:**

FREEZER ☐ ID \_\_\_\_\_☐ NO

DATE TIME

12-29-85	1530
----------	------

DATE/TIME

DATE/TIME

12/30/88 10:05

FEL Ex

IMMEDIATE ANALYSIS ☐

**SAMPLES RECEIVED  
IN GOOD CONDITION**

CABINET ☐ ID \_\_\_\_\_

YES NO

• PRINT NAME AFTER SIGNATURE



**McLaren Environmental Engineering**

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

TOTAL PETROLEUM HYDROCARBONS  
MODIFIED EPA METHOD 8015

Project: Lockheed, GA

Lab ID: 19085

Sample  
Location: GS #12

Date  
Collected: 12/28/88

Sample  
Number: 3598

Date  
Analyzed: 01/03/89

<u>PETROLEUM HYDROCARBONS</u>	<u>CONCENTRATION</u> ug/g (ppm)	<u>REPORTING LIMIT</u> ug/g (ppm)
Gasoline Range	< 10	10
Diesel Range	< 10	10
 Total Petroleum Hydrocarbons	 < 10	 10

Method Blank Results:

Gasoline: < 10 ppm  
Diesel: < 10 ppm

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/04/89

Laboratory Director: J. M. Bartell



McLaren Environmental Engineering

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, GA

Lab ID: 19086

Sample  
Location: GS #12

Date  
Collected: 12/28/88

Sample  
Number: 3598

Date  
Analyzed: 01/04/89

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
o-Dichlorobenzene	< 0.02	0.02
m-Dichlorobenzene	< 0.02	0.02
p-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 105%

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/06/89

Laboratory Director: J. M. Bartell

J. M. Bartell



McLaren Environmental Engineering

**TOTAL PETROLEUM HYDROCARBONS  
MODIFIED EPA METHOD 8015**

Project: Lockheed, GA

Lab ID: 19087

Sample  
Location: GS #13

Date  
Collected: 12/28/88

Sample  
Number: 3599

Date  
Analyzed: 01/03/89

<u>PETROLEUM HYDROCARBONS</u>	<u>CONCENTRATION</u> ug/g (ppm)	<u>REPORTING LIMIT</u> ug/g (ppm)
Gasoline Range	< 10	10
Diesel Range	< 10	10
 Total Petroleum Hydrocarbons	 < 10	 10

Method Blank Results:

Gasoline: < 10 ppm  
Diesel: < 10 ppm

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/04/89

Laboratory Director: J. M. Bartell



McLaren Environmental Engineering

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, GA

Lab ID: 19088

Sample  
Location: GS #13

Date  
Collected: 12/28/88

Sample  
Number: 3599

Date  
Analyzed: 01/04/89

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
o-Dichlorobenzene	< 0.02	0.02
m-Dichlorobenzene	< 0.02	0.02
p-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 112%

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/06/89

Laboratory Director: J. M. Bartell

 McLaren Environmental Engineering

TOTAL PETROLEUM HYDROCARBONS  
MODIFIED EPA METHOD 8015

Project: Lockheed, GA

Lab ID: 19089

Sample  
Location: Fill

Date  
Collected: 12/28/88

Sample  
Number: 3600

Date  
Analyzed: 01/03/89

PETROLEUM HYDROCARBONS

CONCENTRATION

REPORTING LIMIT

	<u>ug/g</u> <u>(ppm)</u>	<u>ug/g</u> <u>(ppm)</u>
Gasoline Range	< 20	20
Diesel Range	< 20	20
 Total Petroleum Hydrocarbons	 < 20	 20

Method Blank Results:

Gasoline: < 10 ppm  
Diesel: < 10 ppm

Comments: 1:2 dilution used for analysis.

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/04/89

Laboratory Director: J. M. Bartell



McLaren Environmental Engineering

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, GA

Lab ID: 19090

Sample  
Location: Fill

Date  
Collected: 12/28/88

Sample  
Number: 3600

Date  
Analyzed: 01/04/89

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
o-Dichlorobenzene	< 0.02	0.02
m-Dichlorobenzene	< 0.02	0.02
p-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 75%

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/06/89

Laboratory Director: J. M. Bartell

 McLaren Environmental Engineering

TOTAL PETROLEUM HYDROCARBONS  
MODIFIED EPA METHOD 8015

Project: Lockheed, GA

Lab ID: 19091

Sample  
Location: GS #14

Date  
Collected: 12/28/88

Sample  
Number: 40751

Date  
Analyzed: 01/03/89

<u>PETROLEUM HYDROCARBONS</u>	<u>CONCENTRATION</u> ug/g (ppm)	<u>REPORTING LIMIT</u> ug/g (ppm)
Gasoline Range	< 10	10
Diesel Range	< 10	10
Total Petroleum Hydrocarbons	< 10	10

Method Blank Results:

Gasoline: < 10 ppm  
Diesel: < 10 ppm

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/04/89

Laboratory Director: J. M. Bartell



McLaren Environmental Engineering

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, GA

Lab ID: 19092

Sample  
Location: GS #14

Date  
Collected: 12/28/88

Sample  
Number: 40751

Date  
Analyzed: 01/04/89

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
o-Dichlorobenzene	< 0.02	0.02
m-Dichlorobenzene	< 0.02	0.02
p-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 79%

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/06/89

Laboratory Director: J. M. Bartell

 McLaren Environmental Engineering

TOTAL PETROLEUM HYDROCARBONS  
MODIFIED EPA METHOD 8015

Project: Lockheed, GA

Lab ID: 19093

Sample  
Location: GS #15

Date  
Collected: 12/28/88

Sample  
Number: 40752

Date  
Analyzed: 01/03/89

<u>PETROLEUM HYDROCARBONS</u>	<u>CONCENTRATION</u> ug/g (ppm)	<u>REPORTING LIMIT</u> ug/g (ppm)
Gasoline Range	< 10	10
Diesel Range	< 10	10
Total Petroleum Hydrocarbons	< 10	10

Method Blank Results:

Gasoline: < 10 ppm  
Diesel: < 10 ppm

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/04/89

Laboratory Director: J. M. Bartell



McLaren Environmental Engineering

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, GA

Lab ID: 19094

Sample  
Location: GS #15

Date  
Collected: 12/28/88

Sample  
Number: 40752

Date  
Analyzed: 01/06/89

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
o-Dichlorobenzene	< 0.02	0.02
m-Dichlorobenzene	< 0.02	0.02
p-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 100%

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/06/89

Laboratory Director: J. M. Bartell

 McLaren Environmental Engineering

TOTAL PETROLEUM HYDROCARBONS  
MODIFIED EPA METHOD 8015

Project: Lockheed, GA

Lab ID: 19095

Sample  
Location: GS #16

Date  
Collected: 12/29/88

Sample  
Number: 40753

Date  
Analyzed: 01/03/89

<u>PETROLEUM HYDROCARBONS</u>	<u>CONCENTRATION</u> ug/g (ppm)	<u>REPORTING LIMIT</u> ug/g (ppm)
Gasoline Range	< 10	10
Diesel Range	< 10	10
Total Petroleum Hydrocarbons	< 10	10

Method Blank Results:

Gasoline: < 10 ppm  
Diesel: < 10 ppm

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/04/89

Laboratory Director: J. M. Bartell



McLaren Environmental Engineering

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, GA

Lab ID: 19096

Sample  
Location: GS #16

Date  
Collected: 12/29/88

Sample  
Number: 40753

Date  
Analyzed: 01/04/89

	Analyte Concentration ug/g <u>(ppm)</u>	Reporting Limit ug/g <u>(ppm)</u>
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
o-Dichlorobenzene	< 0.02	0.02
m-Dichlorobenzene	< 0.02	0.02
p-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 123%

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/06/89

Laboratory Director: J. M. Bartell

J. M. Bartell



McLaren Environmental Engineering

TOTAL PETROLEUM HYDROCARBONS  
MODIFIED EPA METHOD 8015

Project: Lockheed, GA

Lab ID: 19097

Sample  
Location: GS #17

Date  
Collected: 12/29/88

Sample  
Number: 40754

Date  
Analyzed: 01/03/89

<u>PETROLEUM HYDROCARBONS</u>	<u>CONCENTRATION</u> ug/g (ppm)	<u>REPORTING LIMIT</u> ug/g (ppm)
Gasoline Range	< 20	20
Diesel Range	< 20	20
Total Petroleum Hydrocarbons	< 20	20

Method Blank Results:

Gasoline: < 10 ppm  
Diesel: < 10 ppm

Comments: 1:2 dilution used for analysis.  
Late eluting oil or grease.  
Suggest 418.1 analysis.

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/04/89

Laboratory Director: J. M. Bartell



McLaren Environmental Engineering

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, GA

Lab ID: 19098

Sample  
Location: GS #17

Date  
Collected: 12/29/88

Sample  
Number: 40754

Date  
Analyzed: 01/04/89

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
o-Dichlorobenzene	< 0.02	0.02
m-Dichlorobenzene	< 0.02	0.02
p-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 97%

Comments:

Analyst: J. M. Hoch

Reviewed by: S. Azimi-Galloway

Date: 01/06/89

Laboratory Director: J. M. Bartell



McLaren Environmental Engineering

# METAL ANALYSIS

Project: Lockheed, GA

Lab ID: 19099

Sample  
Location: GS #18

Date  
Sampled: 12/29/88

Sample  
Number: 40755

Date  
Analyzed: 01/06/89

METAL (SYMBOL)/EPA METHOD	CONCENTRATION ug/g (ppm)	REPORTING
		LIMIT ug/g (ppm)
Antimony (Sb)/7040	6	5
* Arsenic (As)/7061	4	0.5
Barium (Ba)/7080	< 10	10
Beryllium (Be)/7090	< 0.5	0.5
Cadmium (Cd)/7130	< 0.4	0.4
Chromium (Cr)/7190	10	0.7
Cobalt (Co)/7200	20	0.8
Copper (Cu)/7210	20	0.9
Lead (Pb)/7420	20	3
** Mercury (Hg)/7470	0.09	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	5	2
* Selenium (Se)/7741	0.1	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	8	5
Zinc (Zn)/7950	38	0.8

\* Hydride generation method  
\*\* Cold vapor method

Comments:

Analyst:

F. Ramezanzadeh

Reviewed  
By:

S. Azimi-Galloway

Date: 01/09/89

Laboratory Director:

J. M. Bartell



McLaren Environmental Engineering

# METAL ANALYSIS

Project: Lockheed, GA

Lab ID: 19100

Sample  
Location: GS #19

Date  
Sampled: 12/29/88

Sample  
Number: 40756

Date  
Analyzed: 01/06/89

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>CONCENTRATION</u>	<u>REPORTING LIMIT</u>
	ug/g (ppm)	ug/g (ppm)
Antimony (Sb)/7040	8	5
* Arsenic (As)/7061	4	0.5
Barium (Ba)/7080	< 10	10
Beryllium (Be)/7090	0.5	0.5
Cadmium (Cd)/7130	< 0.4	0.4
Chromium (Cr)/7190	19	0.7
Cobalt (Co)/7200	3	0.8
Copper (Cu)/7210	29	0.9
Lead (Pb)/7420	30	3
** Mercury (Hg)/7470	0.03	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	8	2
* Selenium (Se)/7741	0.1	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	20	5
Zinc (Zn)/7950	41	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

F. Ramezanzadeh

Reviewed  
By:

S. Azimi-Galloway

Date: 01/09/89

Laboratory Director:

J. M. Bartell



McLaren Environmental Engineering

# METAL ANALYSIS

Project: Lockheed, GA

Lab ID: 19101

Sample  
Location: GS #20

Date  
Sampled: 12/29/88

Sample  
Number: 40757

Date  
Analyzed: 01/06/89

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>CONCENTRATION</u> ug/g (ppm)	<u>REPORTING</u> <u>LIMIT</u> ug/g (ppm)
Antimony (Sb)/7040	8	5
* Arsenic (As)/7061	3	0.5
Barium (Ba)/7080	10	10
Beryllium (Be)/7090	0.5	0.5
Cadmium (Cd)/7130	< 0.4	0.4
Chromium (Cr)/7190	20	0.7
Cobalt (Co)/7200	4	0.8
Copper (Cu)/7210	76	0.9
Lead (Pb)/7420	48	3
** Mercury (Hg)/7470	0.2	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	9	2
* Selenium (Se)/7741	0.2	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	20	5
Zinc (Zn)/7950	79	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

F. Ramezanzadeh

Reviewed  
By:

S. Azimi-Galloway

Date: 01/09/89

Laboratory Director:

J. M. Bartell



McLaren Environmental Engineering

**SL** SAVANNAH LABORATORY  
AND ENVIRONMENTAL SERVICES,

[illegible]

James W. Andrews, Ph.D.  
President

Janette Davis Long  
Vice-President

**SAVANNAH LABORATORIES  
AND ENVIRONMENTAL SERVICES, INC.**

5102 LaRoche Avenue (31404)  
P. O. Box 13548 • Savannah, GA 31416-0548  
(912) 354-7858



LOG NO: 88-8111

Received: 27 DEC 88

Mr. Steve Carlton  
McLaren Environmental Engineering  
11101 White Rock Road  
Rancho Cordova, CA 95670

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		SAMPLED BY
8111-3	# 003595	12-27-88	Client
8111-4	# 003597	12-27-88	
PARAMETER			
	8111-3	8111-4	
Petroleum Hydrocarbons (IR), mg/kg dw	270	740	

Methods: EPA SW-846

  
Steven J. White

James W. Andrews, Ph.D.  
President

Janette Davis Long  
Vice-President

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**AND ENVIRONMENTAL SERVICES, INC.**

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McLaren Environmental Engineering  
11101 White Rock Road  
Rancho Cordova, CA 95670

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	SAMPLED BY	
8111-1	# 003594 12-27-88	Client	
8111-2	# 003596 12-27-88		
PARAMETER		8111-1	8111-2
EP Toxicity (SW846-1310)			
% that passes 9.5 mm sieve,		100 %	100 %
Percent Solids,		93 %	97 %
EP Extract Initial pH,		9.5	8.7
EP Extract final pH,		5.1	4.8
Ml 0.5N acetic acid/liter extract,		16	21
EP Metals			
Arsenic (EP Tox), mg/l		<0.20	<0.20
Barium (EP Tox), mg/l		<0.050	0.42
Cadmium (EP-Tox), mg/l		0.063	<0.010
Chromium (EP Tox), mg/l		<0.050	<0.050
Lead (EP Tox), mg/l		0.26	<0.20
Selenium (EP Tox), mg/l		<0.50	<0.50
Silver (EP Tox), mg/l		<0.010	<0.010
Mercury - EP Tox (7470), mg/l		<0.002	<0.002

**APPENDIX B**

**AGENCY COMMUNICATION**



## McLaren Environmental Engineering

---

January 5, 1989

Mr. Howard Barefoot  
Georgia Environmental Protection Department  
Site Investigation Unit  
3420 Normand Berry Drive  
Hapeville, GA 30354

Dear Mr. Barefoot:

McLaren Engineering proposes to dispose of approximately 45 cubic yards of soil at the Savannah Sanitary Landfill on Dean Forest Road. The soil was excavated from Lockheed's shipyard facility at 3126 Riverdrive Road, Thunderbolt, Georgia. About one-half of the soil came from an area which was used for crane parking and repair. The remaining portion of soil came from a low area, which was suspected of being contaminated as a result of nearby engine steam cleaning activities and runoff from surrounding asphalt roadways and petroleum product storage areas.

Representative soil samples were taken from each of the areas to be excavated. The results of EP toxicity and petroleum hydrocarbon (IR) laboratory analysis are attached to this letter. McLaren's field engineer noted that the soil did not exhibit the characteristics of flammability, corrosivity, or reactivity as described in 40 CFR Section 261.

Your timely attention to this matter would be greatly appreciated. If you have any questions, please call Steve Carlton or myself at (916) 638-3696.

Sincerely,

Gary P. Becker, P.E.  
Engineering Associate

GPB/cs

# Georgia Department of Natural Resources

205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334

J. Leonard Ledbetter, Commissioner  
Harold F. Reheis, Assistant Director  
Environmental Protection Division

February 3, 1989

Mr. Gary P. Becker  
Engineering Associate  
McLaren Environmental Engineering  
11101 White Rock Road  
Rancho Cordova, California 95670

RE: Lockheed Shipbuilding Company  
Waste Disposal

Dear Mr. Becker:

We have reviewed the data you submitted regarding the excavated soil from the Lockheed Shipbuilding Company, Savannah, Georgia.

Being nonhazardous, we have no objection to disposal in a permitted sanitary landfill with the concurrence of the landfill owner.

Please be advised that should the character of the waste change as a result of process modification, raw material changes, etc., it is your responsibility to reanalyze the waste so that it continues to be properly classified as hazardous or nonhazardous.

Should you need additional information, please call (404) 669-3927.

Sincerely,



Howard L. Barefoot  
Unit Coordinator  
Site Investigation Program

HLB:tr/bc/1/16

cc: James W. Dunbar  
Randolph D. Williams

File: Lockheed Shipbuilding Co. (R)

SIP-GC-02

12/88

PROPERTY TRANSACTION  
ENVIRONMENTAL ASSESSMENT  
AND VERIFICATION SAMPLING  
LOCKHEED SHIPBUILDING  
SAVANNAH DIVISION

SEPTEMBER 7, 1988



*McLaren Environmental Engineering*

---



## McLaren Environmental Engineering

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September 7, 1988

Mr. Fred Reed  
Lockheed Corporation  
4500 Park Granada Boulevard  
Calabasas, CA 91399-0300

Dear Mr. Reed:

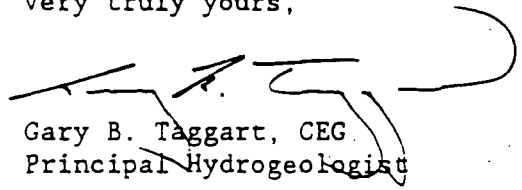
**PROPERTY TRANSACTION ENVIRONMENTAL ASSESSMENT AND VERIFICATION SAMPLING  
LOCKHEED SHIPBUILDING SAVANNAH DIVISION**

Enclosed is the Property Transaction Environmental Assessment and Verification Sampling report for the Lockheed facility.

Ten areas of environmental concern were identified during the site survey. A baseline sampling program was conducted to investigate the ten areas. The program consisted of sampling for the following: asbestos; hydrocarbons and solvents in soil; hydrocarbons and solvents in groundwater; PCB's in transformer oil; hydrocarbons, solvents and heavy metals in the marine sediments; and heavy metals in stockpiled waste sandblasting grit. In addition, groundwater was sampled for general minerals to determine if the water was potable or brackish to assess the beneficial use of the groundwater.

Asbestos was detected at 1 to 5 percent in the floor tile of one building. Chromium was detected slightly above regulatory guidelines for one of five marine sediment samples and the metals chromium, copper, lead, nickel, and zinc were detected at elevated concentrations for samples from the waste sandblasting grit. The other 73 analyses for 34 samples collected at the site did not detect chemicals above regulatory guideline and therefore are not of environmental concern. The general mineral analyses of the groundwater indicate that the water is brackish and of no beneficial use for domestic and municipal application.

Very truly yours,



Gary B. Taggart, CEG  
Principal Hydrogeologist

eh

Enclosure

- ☐ Sacramento — 11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696
- ☐ Los Angeles — 12555 West Jefferson Boulevard, Suite 216, Los Angeles, CA 90066 (213) 823-2313

PROPERTY TRANSACTION  
ENVIRONMENTAL ASSESSMENT  
AND VERIFICATION SAMPLING  
LOCKHEED SHIPBUILDING  
SAVANNAH DIVISION

SEPTEMBER 7, 1988



Moller Engineering

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PROPERTY TRANSACTION ENVIRONMENTAL ASSESSMENT  
AND VERIFICATION SAMPLING LOCKHEED SHIPBUILDING  
SAVANNAH DIVISION - SEPTEMBER 7, 1988

## INTRODUCTION

An environmental assessment and verification sampling program was conducted at the Lockheed Shipbuilding Company's Savannah Division facility at 3126 River Drive, Thunderbolt, Georgia during June, July and August 1988. The work was conducted in two phases. Phase I consisted of an initial site survey and design of a baseline sampling program for the site. The site survey included employee and regulatory staff interviews and review of city, county, state and federal regulations, and permits. Phase II consisted of asbestos sampling, soil sampling, groundwater monitor well construction, water quality sampling, and marine sediment sampling. This report summarizes the results of both Phase I and II investigations.

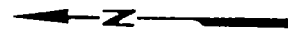
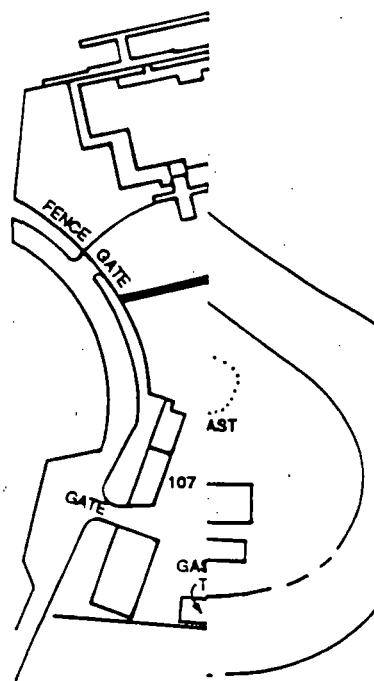
The Lockheed Savannah Division facility is located along the Wilmington River in Thunderbolt, Georgia. A schematic drawing of the facility is shown on Figure 1. The features pertinent to this assessment are:

- . Building 101 - Storage and small component manufacturing;
- . Building 102 - Warehouse, lockers, and welder repair;
- . Building 103 - Warehouse, offices;
- . Building 104 - Fabrication building;
- . Building 105 - Descaling and painting building;
- . Building 107 - Human Resources building;
- . Aboveground fuel storage area;
- . Thunderbolt Marine, Inc.;
- . West Storage Area;
- . Building 201 - Warehouse;
- . Building 202 - Module building (including machine, pipe cutting, electrical shops, and offices);
- . Building 203 - Outfitting building;
- . Sandblast area;
- . Hazardous waste storage area;
- . Subassembly platens 1-6;
- . Subassembly platens 1A, 1B, 2A, 2B;
- . Pier #1;
- . Pier #2; and
- . Basin.

## PHASE I INVESTIGATION

The initial investigations at the Lockheed facility were conducted on June 30, and July 1, 1988. The investigations consisted of a site survey and review of records available from:

FIGURE 1  
LOCATION MAP



0' 200'  
SCALE  
(APPROX.)



- . City of Thunderbolt, Fred Sutton;
- . City of Savannah;
- . Chatham County;
- . Georgia Department of Natural Resources (DNR), Savannah Regional Office, John Merriman;
- . Georgia DNR Air Quality Control Division, William Montgomery;
- . Georgia DNR Environmental Protection Division;
- . Georgia DNR Hazardous Waste Management Program, William Munday;
- . Georgia DNR Water Protection Branch, Michael Kreson; and
- . U.S. Coast Guard Operations and Marine Environmental Division, Lt. Richard Gaudiosi.

A complete list of interviews and documents reviewed are included in Appendix A. The following describes the results of our investigation.

#### BACKGROUND

The general history of the Savannah Division facility was supplied by Mr. Jesse Corbett. Mr. Corbett has worked at the facility since 1978 and is familiar with the site history since the late 1950's previous to Lockheed leasing the property.

The Thunderbolt Marine, Inc. (TMI) marina, North Yard, South Yard, and West Storage Area are owned by TMI. Lockheed Savannah Division operates the North Yard and South Yard under a lease with TMI.

In the 1950's the site was developed on reclaimed marsh land between the Wilmington River and Williamson Creek. Prior to the 1950's, the area along the Wilmington River was used by shrimp boats for docking. The marina and dock were in place when the property was purchased by TMI approximately 25 years ago (about 1963). The South Yard was a low-lying marsh in 1963. The basin between the North Yard and South Yard existed but there were no seawalls to prevent erosion of the sediments along the edge of the basin. TMI dredged the basin, installed the seawalls, and built up the South Yard using dredged materials. Considering the long history of use by shrimp boats, the bottom dredged material used in the South Yard could contain bilge waste due to the practice of shrimp boats pumping bilge waste directly into the Wilmington River and the basin between the two yards. The South Yard was constructed on driven pilings that were filled with dredge material. About 50 to 60 percent of the yard was surfaced with asphalt prior to construction of the buildings.

TMI constructed pleasure boats, fishing boats, and barges at the facility from 1963 to 1986. Pleasure boats were on display in the western part of Building 101, which was the first structure built in the North Yard. When Lockheed leased the property all of the buildings shown on Figure 1, existed except for Building 105 and the Hazardous Waste Storage Facility. These facilities were added by Lockheed in 1986 and 1987.

Two aboveground fuel storage tanks are located in a bermed area about 80 feet north-northwest of Building 104. The southern tank has capacity for approximately 20,000 gallons of diesel. The northern tank has capacity for approximately 10,000 gallons of unleaded gasoline. These tanks were installed by TMI approximately 20 years ago. According to Mr. Fred Sutton, Assistant City Administrator for the City of Thunderbolt, TMI has obtained the required permits for the tanks. The installation was inspected and approved by an inspector from the Thunderbolt Fire Department. The gasoline and diesel is transferred in underground pipes from the storage tanks to the three storage tanks at the TMI marina. The fuel is then dispensed from three pumps to boats at the TMI dock. Diesel is also transferred in an underground pipeline from the storage tank to a pump at the northwestern edge of the basin to fuel boats owned by TMI. Lockheed does not use the fuel stored in these tanks.

Gasoline and diesel for Lockheed vehicles are supplied by two portable 200-gallon tanks. The tanks are filled in the Hazardous Waste Storage Area by a local vendor. The portable tanks are moved around the Lockheed facility by a fork lift to dispense the fuel. The supply delivery system for the portable tanks is gravity feed. The fork lift elevates the portable tank to supply the energy for fuel dispensing when the tank is less than one-quarter full. When the tank is more than one-quarter full the gravity feed system will operate with the tank on the ground.

The electricity and natural gas for the site are supplied by Savannah Electric and Power. Water supply and sanitary sewer hookup are provided by the City of Savannah. There are three oil-cooled transformers on the North Yard facility. Two are General Electric transformers owned by Savannah Electric and Power. The third transformer is manufactured by Wagner and is owned by TMI. There were no visible leaks from the transformers.

The sanitary sewer hookup is not intended for industrial waste. Waste oil and waste solvent at the Lockheed facility are collected and transferred to the Hazardous Waste Storage Area. Ashland Chemical Company transports the waste oil and waste solvent off site. Storm drains in the North and South Yards drain into the basin and Williamson Creek.

#### **SITE SURVEY**

Landing Craft Utility (LCU) are constructed at the Savannah Division facility by Lockheed Shipbuilding for the U.S. Army. In brief, the construction process consists of:

- . cutting raw stock steel with plasma cutter;
- . descaling and priming the rough cut steel;
- . grinding the steel edges using pneumatic grinders;
- . welding steel together with heli-arc, oxy-acetylene, and carbon dioxide-argon welders;
- . sandblasting and second coat painting;

- . installation of power plants and air conditioning units;
- . assembly and installation of electric components;
- . machining and installation of hydraulic lines;
- . final assembly of the components into the LCU; and
- . final paint application to interior and exterior of the LCU.

Descaling is done using steel abrasive. Sandblasting is done using silica sand and other abrasives. Underground gas lines supply oxygen, natural gas, and compressed air. Oxygen for the underground lines is supplied by 3-foot diameter 8-foot long cylinders at three locations on the facility. Compressed air is used to power pneumatic tools. Compressed air is supplied by fixed Sulair compressors and mobile General Electric compressors. Welding gas is supplied from 320 cubic-foot cylinders. There were approximately 60 oxygen cylinders, 40 acetylene cylinders, and 60 carbon dioxide-argon cylinders observed during the site survey.

Paint and painting equipment are cleaned using solvents from 55-gallon drums. There were approximately 50 drums containing solvents and hydrocarbons observed during the site survey. Paint is stored in 55-gallon, 5-gallon, and 1-gallon cans, and about 50 spray cans of paint were observed during the site survey. Hydraulic oil, lube oil, automatic transmission fluid, and antifreeze are stored in 55-gallon drums. There were approximately 30 drums of oil and antifreeze observed during the site survey.

A brief discussion of manufacturing processes, chemical storage, and/or potential environmental concerns at the Lockheed Savannah facility follows. Buildings with one hundred series numbers are located in the North Yard and two hundred series in the South Yard.

#### Building 101 - Storage and Small Component Fabrication

There were two sets of ceiling tiles in this building where newer tiles were set about 10 feet lower than the in-place older tiles. Floor tiles could be pre-1973 and could also contain asbestos. Mr. Jesse Corbett stated that the U.S. Navy had inspected the facility for asbestos within the last 5 years. Documentation of the asbestos survey was not found during the record review at the facility. A hydraulic cutter and press break observed in the building use hydraulic oil, but there appears to be no significant loss of oil onto the floor. Welding is done in the building with carbon dioxide-argon (CO<sub>2</sub>-Ar) gas and oxygen.

The potential presence of asbestos in ceiling and floor tiles is the only potential environmental concern noted at this building.

#### Building 102 - Warehouse, Lockers, Machine Repair

The south end of the building is used for lunch room, lockers, and showers. The north end is used for equipment maintenance. Small quantities of oil and grease are used in the north end of the building. Concrete floors and fiberglass insulation were noted in the building.

To the west of Building 102 is the area where oil is changed in Lockheed trucks and oil changes and repairs are done on mobil cranes and other vehicles. A dispensing cradle on asphalt holds five 55-gallon drums of lube oil, hydraulic oil, and automatic transmission fluid (ATF). An 80-gallon container for dispensing mineral spirits (resting on asphalt) is also located along the west edge of the building. Just south of the six virgin product containers is a 250-gallon waste oil container in a steel containment box that is approximately 5 feet by 3 feet by 1 foot high that rests on soil. There is staining on the asphalt where vehicle repairs have resulted in fluid draining onto the asphalt. There is no drip containment under the dispensing cradle so that hydraulic oil, lube oil, and ATF are dripping onto the asphalt. The area is periodically washed down and drains to the soil south of the dispensing cradles next to the waste oil container.

Along the outside west edge of Building 102 is a Sulair compressor that is leaking minor amounts of hydraulic oil. The stain extends about 1 foot around the base of the compressor. The oil stains associated with the dispensing cradle, vehicle repair, and air compressor are the only potential environmental concerns noted in and around Building 102.

A Wagner transformer (not owned by Savannah Electric and Power) is located next to this building. Although there was no observed stains associated with the transformer, PCB samples are necessary to verify the absence of PCBs.

#### **Building 103 - Warehouse, Offices, Welding Equipment Maintenance**

This building is sub-divided into three areas: office space, tool room, and heli-arc welding repair. The office space has floor tiles that may contain asbestos. No areas of environmental concern were noted in the tool room. The welding repair area contains one 55-gallon drum of "Electric Kleen" solvent. The solvent is sprayed onto parts at the drum and carried to work benches. There were no stains around the solvent drum to suggest spills had occurred.

#### **Building 104 - Fabrication Building**

The plasma cutter and associated water holding tank are housed in this building. The bottom foresection of the LCU is constructed in this building and is pulled out into the basin when construction is complete. The plasma cutter uses nitrogen gas and compressed air to cut the steel plates. The plasma cutter creates essentially no scrap so the holding tank does not need to be emptied or cleaned out. Welding is done with argon-helium, oxy-acetylene, and heli-arc systems. Nitrogen is supplied by a large cylinder. Oxygen is supplied by a 3-foot diameter by 8-foot long cylinder located outside Building 104. Argon-helium, oxygen, and acetylene are supplied by 300-cubic-foot cylinders. Welding flux in a 10-gallon container is also used in the construction process.

#### Building 105 - Descaling and Primer Paint Application

Raw stock steel plates are descaled and painted with primer in the building. The mill scale is removed by a wheelabrator which uses small steel shot as an abrasive. The waste shot is sucked up into a bag house operation which removes the debris to 55-gallon drums outside the building. The plates then move into an automatic spray booth where the paint is applied. The overspray is captured on a filter media which is discarded in commercial trash bins. The volatile components of the paint are carried up to the top of the building to be discharged to the atmosphere. The paint booth discharge is covered by an air quality permit issued by William Montgomery of the Georgia Air Quality Control Section of the Department of Natural Resources.

Although paint overspray and volatile components of paint are of environmental concern, the paint application and associated waste disposal appear to comply with regulatory standards.

#### Building 107 - Human Resources

Personnel and other employee records are contained in this building. The building was remodeled by Lockheed from floor to ceiling in 1986. No sources of environmental concern were identified in Building 107.

#### Aboveground Fuel Storage Area

The 20,000-gallon diesel tank and 10,000-gallon unleaded gasoline tank (located in the north west corner of the site) are not on the property that Lockheed leases and Lockheed does not use fuel from these tanks. There is no documented data to suggest that operations by Lockheed have affected the underground product lines associated with the tanks.

#### Thunderbolt Marine, Inc.

This area is outside the scope of work for review. A brief visit onto the property identified no significant sources of chemicals to soil, groundwater, or the Wilmington River. Three aboveground fuel tanks are located on this property to dispense fuel to boats at the TMI Marina. The tanks, which are filled through underground lines from the large tanks mentioned above, appeared to be sound.

#### West Storage Area

Lockheed is storing a limited amount of old vehicles and equipment across Sylvan Island Road to the west of the facility. The following equipment was observed in the Lockheed section of the yard:

- . pipe fittings;
- . old tires for cranes;
- . a fork lift;

- . a Dodge 1/2 to 3/4 ton truck;
- . pier pilings;
- . spools of wire rope; and
- . 4 ship/truck containers with equipment that can not be exposed to the elements.

#### **Building 201 - Warehouse Storage**

Wood products are stored in this building. No potential sources of environmental concern were identified in Building 201.

#### **Building 202 - Module Building**

This building includes a machine shop, a pipe cutting shop, an electrical component shop, and offices for management, production, and accounting along with a large open area used for component construction.

The machine shop has 3 large lathes, a radial drill, a milling machine, and 2 drill presses that require cutting oil for operation. Overspray of cutting oil is generally contained by recycling units on the machinery. Overspray not contained by the machinery ends up on the concrete floor. The oil overspray is periodically adsorbed with dry sweep and put into the commercial bins for disposal. The concrete floor in the machine shop was stained and generally oily around the machinery. One 55-gallon drum of cutting oil was observed in the machine shop along with argon gas cylinders used for welding stainless steel.

The pipe cutting and bending area contained pipe cutters, band saws, a computerized pipe bender, a small bead sandblasting unit, oxygen, acetylene, CO<sub>2</sub>-Ar cylinders, and heli-arc welding equipment.

The electrical shop contained small electrical components for the LCU. Oil and solvents were dispensed from pint cans in this area. An air-cooled transformer is located just outside the electrical shop.

The office space along the western edge of the Building 202 has ceiling and floor tiles. The tiles are recent additions and therefore are not considered to potentially contain asbestos.

The large component construction area in the north part of the building was being used to store LCU power plant equipment and for small part painting. There was no permanent equipment for painting observed, but paint overspray was present on the asphalt floor. There were oxygen and acetylene cylinders present for welding.

The asphalt paving behind Building 202 ends approximately 50 to 100 feet from the building. Along the edge of the asphalt was sand that appeared to contain an oil residue. The area noted was 10 feet wide by 20 feet long at the edge of asphalt.

Potential environmental concerns associated with Building 202 are oil and machine cuttings in the machine shop and the sand that appears to have an oil residue at the end of the asphalt south of the building. The oil on the concrete machine shop floor has low potential to have entered the underlying soil. Disposal of the oil-soaked dry sweep and cuttings is of concern.

#### Building 203 - Outfitting Building

This building was used for furniture and component storage, construction, and painting of the LCU super structure. The stock stored in this building included chairs, desks, sinks, refrigerators, insulation panels, contact cement, floor tiles, and quick set paste. The super structure was sprayed with a white lacquer coat in this building. On the eastern edge of the building, about 65 gas cylinders for welding were stored including oxygen, acetylene, and CO<sub>2</sub>-Ar. Seven oxygen and argon cylinders were noted inside the building for welding.

Just outside the south end of the building is a Sulair air compressor used for sandblasting. The compressor has leaked hydraulic oil and an approximately 10 foot diameter area of oil soaked sand and dust surrounds the compressor.

The oil stain associated with the air compressor on the south side of Building 203 was the only area of potential environmental concern noted for this building.

#### Sandblast Area

A rail line extends between Buildings 202 and 203 south to the sandblasting area. The aft section of a LCU was being sandblasted and painted during the site tour. A 20-foot diameter sand hopper is located south of Building 203 and supplies the sand used for sand blasting the metal. Compressed air is supplied by two stand-alone mobile compressors. Mr. Corbett stated that a natural sand grit was the only material used to sand blast. Mr. Paul Norman, Lockheed Savannah Health and Safety specialist, stated that in the past a man-made sand blasting product (Black Beauty) was used and that this product required special handling for disposal. The materials safety data sheet for Black Beauty state that the product is 100 percent silica.

Paint is also applied to the LCU at this point. There are two paint sheds used to store paint, paint equipment, and personal equipment for the painters. The sheds are about 200 feet northeast of the sand hopper building. The sheds are built on top of dredge fill. One trailer is used for paint storage. The trailer contained about 50 5-gallon and, 20 1-gallon cans of paint, and a 55-gallon drum of methyl ethyl ketone (MEK) for cleaning spray guns and parts. There were 20 empty 5-gallon cans without tops stacked at random outside the trailer. There was evidence inside the trailer that paint and solvent had been spilled onto the floor. There were no obvious paint spills outside the trailer on soil and

sandblasting debris that surrounds the trailer. It should be noted that this area is covered by sandblasting debris, so any spilled paint could be covered later by settling debris from sandblasting.

The second trailer contains lockers for the painters and parts for spray guns.

Potential sources of environmental concern noted in this area are used sandblasting grit, and paint and solvent use, handling, and storage associated with the paint storage trailer.

#### Hazardous Waste Storage Area

Both virgin product and waste product are stored at this facility. The following materials and containers were observed during the site survey:

- . Two 10,000-gallon waste oil tanks;
- . 1,000-gallon unleaded gasoline tank;
- . 500-gallon diesel tank;
- . 200-gallon portable unleaded gasoline tank;
- . 200-gallon portable diesel tank;
- . Two 200-gallon portable waste oil tanks; and
- . Approximately 54 55-gallon drums of MEK, methyl isobutyl ketone, xylene, liquid caustic soda, and waste solvent.

The 10,000-gallon waste oil tanks are contained within a concrete bermed structure that is approximately 3 feet high. Approximately 0.1 feet of water with an oil sheen was observed in the containment structure during the site survey. The fluid is periodically drained to the ground from the south side of the containment structure.

The 1,000-gallon unleaded gasoline and 500-gallon diesel tanks are contained within a bermed structure that is 0.5 feet high. There is approximately 10 to 15 feet between the two tanks and the berm appears to be capable of containing the contents of a tank in the event of a leak.

Drums are stored on concrete within the covered structure. However, three barrels of waste MEK were stored on the ground 50 feet south of the covered structure. The portable 200-gallon diesel and unleaded tanks were located in front of the covered structure setting on the ground. The two portable 200-gallon waste oil tanks were located 50 feet south of the covered structure on the ground.

The waste oil is periodically picked up by Waste Oil Recovery Service of Jacksonville, Florida to be recycled. Mr. Paul Norman stated that no permits were required by the State of Georgia to store the waste oil because Lockheed does not generate or store enough waste oil to require a permit. Waste solvent is periodically picked up by Ashland Chemical Company and shipped to a hazardous waste site under a hazardous waste manifest.

Potential sources of environmental concern noted in the Hazardous Waste Storage Area are the drainage area from the containment structure for the 10,000-gallon tanks, the ground around the 200-gallon portable tanks used for transporting diesel and unleaded gasoline, and the general vicinity of the area that is unpaved where waste solvent or oil may be temporarily stored or handled.

#### Subassembly Platens 1 Through 6

These platens are not as well defined as shown on Figure 1 because all of the platens have not been constructed, but the areas indicated generally contain discreet operations. The location of the six platens was taken from a Lockheed design drawing. Platens 1 through 3 are used to construct the 3 decks of the superstructure for the LCU. Equipment used in these areas are grinders, heli-arc welders, and welding using CO<sub>2</sub>-Ar, oxygen, and natural gas.

Platen 4 is used for construction of submarine missile repair modules. During the site tour hydraulic equipment was being installed and tested.

Platen 5 is used to park and repair large cranes used for lifting components of the LCU. The soil in this area had hydraulic fluid or diesel stains. The soil was stained in patches and areas with standing water were covered with an oil sheen.

Platen 6 is used for storage of large block and tackle equipment, ship anchor chains, and subcontractor supply trailers. The only notable product stored in this area is 200 5-gallon cans of paint. Paint is not used in this area.

The potential source of environmental concern noted in this area is the crane parking and repair area. Hydraulic fluid or fuel appears to have leaked onto the ground from the heavy machinery stored there.

#### Subassembly Platens 1A, 1B, 2A, 2B

These areas are used for construction of the hull of the LCU. Grinders and welders are used in this area. Welding is done with heli-arc welders and with oxy-acetylene or CO<sub>2</sub>-Ar gas. Other facilities in this area include: an old emergency fire pump shed; a natural gas tank with compressor; an electric winch for pulling hull components out of Building 104; employee office trailers; and sewage lift station. There were no potential sources of environmental concern identified in this area.

#### Pier #1

The first complete LCU (#2001) was docked at Pier #1. There were approximately 40 55-gallon drums of hydraulic oil and anti-freeze in the vicinity of the ship to service the LCU. All drums were covered, 10 drums were stored on concrete, and 30 drums were stored on soil. None of the drums appeared to leak and no stains were observed.

## Pier #2

No ship was docked at Pier #2. Subcontractor trailers are located south of the pier. A single drum of each of the following chemicals was observed: freon, hydraulic oil, and soap. About 30 spools of wire rope were also stored in this area. No stains or obvious contamination were identified in the vicinity of Pier #2.

## Basin

The 7-acre basin between the South Yard and North Yard is used by Lockheed to move ship components from Building 104 to the South Yard and to dock the completed LCUs. The basin is also used by TMI to dock dredge barges. There has been one documented Lockheed spill in this basin during the two years that Lockheed has been at the site. About 25 gallons of hydraulic fluid was accidentally poured into the basin during the first quarter of 1988. The spill was immediately reported to the U.S. Coast Guard Marine Safety Division in Savannah. There have been numerous "mystery spills" in the vicinity of the basin along the Wilmington River. It is common practice among local commercial boats and pleasure boats to pump bilge water, containing oil and gasoline or diesel, directly into the river. There have been about ten "mystery spills" on the Wilmington River reported to the Coast Guard near the Lockheed facility in the last two years. Due to tidal currents, spills occurring along the Wilmington River can end up migrating into the basin.

Another potential source of chemicals to the basin includes prior operations at the facility where sanding or painting of vessels may have resulted in antifouling paint or paint debris ending up in the water. Historical operations, past construction practices in the basin, or bilge water from sources other than Lockheed or TMI may have resulted in chemicals filtering down into basin sediments and are of environmental concern, especially paint related metals or hydrocarbons.

## SUMMARY OF SURVEY FINDINGS

The Lockheed Savannah facility is relatively clean considering the type of construction at the site and the size of the operations conducted. However the procedure for handling, storage, use, and disposal of wastes generated at the site could be improved. In addition, maintenance of heavy machinery such as cranes or trucks should be conducted in a garage area with a bermed concrete floor so that spills are contained.

Based on the site survey and regulatory review the following environmental concerns were identified:

1. The potential presence of asbestos in ceiling and/or floor tiles in Buildings 101, 102, and 103;

2. The potential presence of hydrocarbons or solvents in the soil and groundwater associated with vehicle repair outside Building 102;
3. The potential presence of PCB in the Wagner transformer outside Building 102;
4. The potential presence of minor leaks from the underground fuel lines due to construction by Lockheed.
5. The potential presence of fuel hydrocarbons in the soil associated with the staining south of Building 202;
6. The potential presence of fuel hydrocarbons in the soil and groundwater associated with leaking oil from the air compressor on the south side of Building 203;
7. The potential presence of man-made sanding grit, paint, and heavy metals in paint, and paint solvents in the soil in the Sandblasting Area;
8. The potential presence of fuel hydrocarbons or solvents in the soil and groundwater associated with the Hazardous Waste Storage Area;
9. The potential presence of fuel hydrocarbons in the soil associated with the storage and repair of cranes in the vicinity of Platen 5; and
10. The potential presence of heavy metals or fuel hydrocarbons in the marine sediments due to past or present operations;

#### PHASE II BASELINE SAMPLING PROGRAM

During the week of July 25, 1988 eight wells were drilled, constructed and sampled, and floor tile, ceiling tile, soil, marine sediments, and water samples were collected at the Lockheed Savannah facility to evaluate the concerns outlined above. Additional sampling took place during the weeks of August 1, and August 8 to verify previous water and soils quality data. This section presents the results of the sampling. Figure 2 depicts the various sample location and types. Table 1 summarizes sampling and analysis data. Well drilling and soil sampling were completed using the procedures listed in Appendix A. Well logs and lithologic descriptions are listed in Appendix B. Soil quality laboratory results are listed in Appendix C. Water quality laboratory results are listed in Appendix D.

FIGURE 2  
SAMPLE SITES AND  
MONITOR WELL LOCATIONS

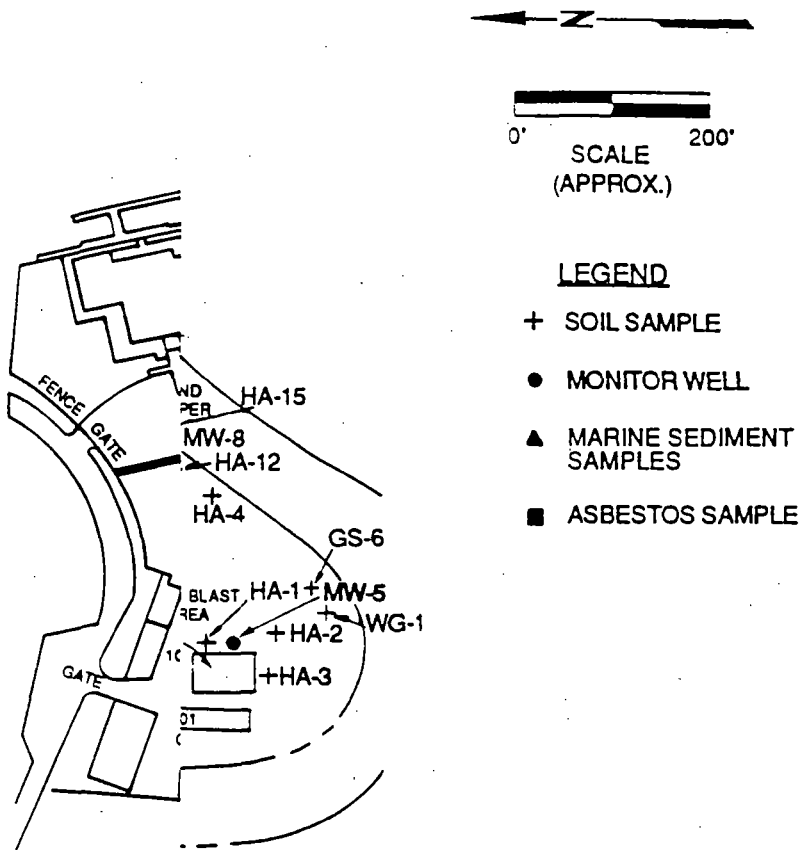


TABLE 1  
SAMPLE LOCATION, DESCRIPTIONS AND TYPE OF ANALYSES

Location	Depths (feet)	TYPE OF SAMPLE ANALYSIS PERFORMED					Comments
		8010	8020	Metal	601 602	608	
HA1 <sup>a</sup>	3.0-3.2		1 <sup>b</sup>				Hazardous Waste Storage. Diesel storage area.
HA2	3.0-3.2	1					Hazardous Waste Storage. MEK drums.
HA3	1.8-2.0		1				Hazardous Waste Storage. Containment Area drain.
HA4	0.5-1.0	1	1				Sand Blast Area, directly under sand.
HA5	0.5-1.0	1	1				At edge of asphalt by paint storage.
HA6	0.25-0.5		1				Air Compressor Area, south of Building 203.
HA7	3.0-3.2		1				By puddle, drainage from Building 202 and Hazardous waste area.
HA8	0.4-0.5		1				At edge of dark stain, Crane parking.
HA9	0.4-0.5		1				At edge of dark stain, Crane parking.
HA10	0.4-0.5		1				At edge of dark stain, Crane parking.
HA11	2.5-3.0	1	1				By containment sump. South of Building 203.

<sup>a</sup> HA1 is hand auger boring 1.

<sup>b</sup> Numers describe the type of sample collected and in the case of wells the number of times sampled.

TABLE 1  
SAMPLE LOCATION, DESCRIPTIONS AND TYPE OF ANALYSES  
(Continued)

Location	Depths (feet)	SAMPLE ANALYSIS			601	608	Comments
		8010	8020	Metal	602		
HA12	0.5-1.0	1	1				Sand Blast Area. Overland drainage to creek. Paint and associated debris.
HA13	0.5-1.0	1	1				Building 202 drainage.
	2.5-3.0	1	1				
HA14	0.5-1.0	1	1				Directly under asphalt. Car repair area at Building 102.
	2.5-3.0	1	1				
HA15	0.5-1.0		1				Grit storage near Sand Hopper.
HA16	1.0-1.3	1	1				Behind causeway wall sandblasting grit used for fill.
GS1 <sup>c</sup>		1	1	1			Grab Sample, Marine Sediments.
GS2		1	1	1			Grab Sample, Marine Sediments.
GS3		1	1	1			Grab Sample, Marine Sediments.
GS4		1	1	1			Grab Sample, Marine Sediments.
GS5		1	1	1			Grab Sample, Marine Sediments.
GS6		1	1				Beneath sandblast grit storage pile near Hazardous Waste Storage.
GS7							Asbestos sample of floor tile Building 101.

<sup>c</sup> GS1 is Grab sample number 1.

TABLE 1  
SAMPLE LOCATION, DESCRIPTIONS AND TYPE OF ANALYSES  
(Continued)

Location	Depths (feet)	SAMPLE ANALYSIS				601 602	608	Comments
		8010	8020	Metal				
GS8							Asbestos sample of floor tile Building 102.	
GS9							Asbestos sample of floor tile Building 103.	
GS10							Asbestos ceiling tile Building 101.	
GS11						1	Transformer oil.	
SB3 <sup>d</sup>	0.5-1.0	1	1				Next to causeway. By drainage pipe and fuel lines. Directly above water table. Converted to MW-3.	
	2.5-3.0	1	1					
MW-1	Water				2		Near Building 101.	
MW-2	Water				2		Near Building 102.	
MW-3	Water				2		Near Building 104 and Basin.	
MW-4	Water				2		West of Building 202.	
MW-5	Water				2		Near hazardous waste storage.	
MW-6	Water				2		Near paint storage south of Building 203.	
MW-7	Water				2		South of Pier #1.	
MW-8	Water				4		In sandblasting area.	
WG-1 <sup>e</sup>				1			Waste sandblasting grit pile at Hazardous Waste Area.	
GP-1 <sup>f</sup>				1			Waste sandblasting grit near well MW-8.	
CS-1 <sup>g</sup>				1			Behind causeway wall at HA-16 waste grit used for fill.	

<sup>e</sup> WG-1 is Waste Grit pile.

<sup>f</sup> GP-1 is Grit pile.

### Asbestos

A ceiling tile from Building 101 and floor tiles from Buildings 101, 102, and 103 were collected to determine if they contained asbestos. Samples were submitted to Forensic Analytical Specialties for analysis. No asbestos was detected above the method detection limit of one percent in the ceiling tile from Building 101 or the floor tiles from Buildings 102 and 103. The floor tile from Building 101 was shown to contain between one and five percent asbestos. Although the asbestos detected in the Building 101 floor tile poses no health risk in its present form, if it is to be removed, such removal should be performed by a certified asbestos contractor. Asbestos results are listed in Table 2 along with soil quality data for volatile compounds.

### Vehicle Repair Area

To determine whether chemical migration has occurred in soil and groundwater in the vicinity of the vehicle repair area west of Building 102, a shallow groundwater monitoring well and a hand auger boring were constructed. The monitor well (MW-2) was drilled to a total depth of 15 feet and a four-inch well was completed inside the augers. Water samples collected on July 28, 1988 and August 12, 1988 were analyzed using EPA Methods 601 and 602 and detected no chemicals of concern above reporting limits. Water quality data are summarized in Table 3. Table 4 is a summary of drinking water standards. These results were verified with additional sampling during a supplemental site visit the week of August 8, 1988. To address chemical occurrence in near surface soils, a hand auger boring (HA-14) was drilled to 3 feet and soil samples were collected at 0.5 feet and 2.5 feet below ground surface and analyzed using EPA Methods 8010 and 8020. Only trichlorofluoromethane at 0.03 ppm was detected. The EPA chemical concentration established for the protection of marine water for trichlorofluoromethane is 6400 ppm.

### Wagner Transformer

Cooling oils in transformers have been known to contain up to 10 percent PCB contamination. Pole mounted transformers are not usually cooled with PCBs, but contamination of transformer oils has occurred because service equipment used on PCB cooled capacitors is the same as that used to service transformers. Due to the potential for PCB contamination of the transformer oil, a sample was collected from the transformer on July 24, 1988. There were no detected PCB's above the detection limit of 5 ppm.

### Underground Fuel Lines

Construction operations such as trenching and foundation excavation may have effected underground fuel lines owned and operated by Thunderbolt Marine, Inc. The fuel lines make an underground traverse to the east and

TABLE 2

SOIL QUALITY  
SUMMARY OF ANALYTICAL RESULTS<sup>a</sup>

Location	Sample Date	Depth (feet)	Chemical			
			Trichloro-fluoro-methane (ppm)	Ethyl-benzene (ppm)	Total Xylene (ppm)	Asbestos (percent)
HA-8	7/22/88	0.4-0.5	ND <sup>b</sup>	0.1	1.04	NA
HA-9	7/22/88	0.4-0.5	ND	ND	0.17	NA
HA-10	7/22/88		ND	0.1	0.93	NA
HA-13	7/27/88	0.5-1.0	ND	0.2	1.5	NA
HA-14	7/25/88	0.5-1.0	0.03	ND	ND	NA
HA-15	7/27/88		ND	ND	0.09	NA
HA-17	7/29/88	1.0-1.3	ND	ND	0.11	NA
GS-7	7/29/88	NA	NA	NA	NA	1-5
GS-8	7/29/88	NA	NA	NA	NA	<1
GS-9	7/29/88	NA	NA	NA	NA	<1
GS-11	8/12/88	NA	NA	NA	NA	<1

<sup>a</sup> Only positive results above reporting limits are shown.

<sup>b</sup> Not detected.

NA = not applicable

TABLE 3

WATER QUALITY  
SUMMARY OF ANALYTICAL RESULTS<sup>a</sup>  
(in ppb)

<u>Location</u>	<u>Sample Date</u>	<u>Trichloro-ethylene</u>	<u>Tetrachloro-ethylene</u>	<u>Benzene</u>	<u>Toluene</u>
MW-1	7/28/88	ND <sup>b</sup>	0.5	ND	ND
	8/12/88	ND	ND	ND	ND
MW-4	7/28/88	1	ND	ND	ND
	8/4/88	ND	ND	ND	ND
	8/5/88	ND	ND	ND	ND
	8/12/88	ND	ND	ND	ND
MW-8	7/28/88	5	6.5	2	2
	8/4/88	ND	ND	0.9	ND
	8/5/88	ND	ND	1	ND
	8/11/88	ND	ND	1	ND

<sup>a</sup> Only positive results above reporting limits are shown.

<sup>b</sup> Not detected.

TABLE 4  
SUMMARY OF DRINKING WATER STANDARDS<sup>a</sup>

CHEMICAL <sup>b</sup>	EPA		MARINE STANDARDS
	<u>Primary</u>	<u>Recommended</u>	<u>EPA Designated Levels to Protect Marine Aquatic Life</u>
Trichloroethylene	5.0	0.00	2,000
Tetrachloro- ethylene	NL <sup>c</sup>	0.00	10,000
Benzene	5.0	0.00	5,100
Toluene	NL	2000	6,300

<sup>a</sup> Include only chemicals detected for groundwater quality samples collected.

<sup>b</sup> All values in parts per billion (ppb).

<sup>c</sup> Not listed.

south from above ground gas and diesel tanks located in the North Yard. Based on Phase I investigations, a pressure test was proposed to check the integrity of these lines.

Mr. Loy Sanders with Watkins Service, Inc. was contacted in regards to conducting the pressure test. Mr. Sanders was familiar with the fueling system at the TMI facility having done repair work on the tank's submersible pump. Mr. Sanders indicated that the fuel lines were made of galvanized iron, were relatively old, and subject to harsh, saline conditions. It was his opinion that a pressure test, at normal testing pressure might cause substantial damage to the fuel lines.

Because of the potential damage to the pipes, soil, and shallow groundwater, the test was not conducted.

#### Machine Shop Oil Disposal

Dark soil stains south of the machine shop in Building 202 were identified during the Phase I investigation. Surface drainage from the machine shop in Building 202 flows south, across a paved area onto this soil. Because cutting oil and sorbent disposal practices in the machine shop could have resulted in contamination of soils at the end of asphalt, two hand auger borings (HA-7 and HA-13) were drilled in the unpaved area to assess hydrocarbon concentrations in near surface soils.

HA-7 was drilled in a tire track that appeared to collect water runoff and rinsate from steam cleaning operations. HA-13 was located at the edge of the asphalt in a drainage path to the storm drain inlet, and was drilled into a dark stain on the soil surface. Both hand auger borings were drilled to a depth of about three feet.

For HA-7 a soil sample was collected at 3 feet below ground surface and analyzed for fuel hydrocarbons using EPA Method 8020. Strong hydrocarbon odors were noted in the soil from the surface to approximately 1 foot below grade but no chemicals were detected above the reporting limits.

Soil samples were collected at 0.5 feet and 2.5 feet below ground surface at the HA-13 location and analyzed for solvents and fuel hydrocarbons using EPA Methods 8010 and 8020, respectively. Chemicals were detected in the 0.5 foot sample only and included 0.2 ppm ethylbenzene and 0.13 ppm total xylene. The EPA chemical concentration established for the protection of marine water is 680 ppm for ethylbenzene and 620 ppm for total xylene.

#### Air Compressor Leakage

Oil leaking from an air compressor in Building 203 was identified during the Phase I investigation. A hand auger boring (HA-6) was drilled on the southeast corner of Building 203 to determine the depth of oil migration that resulted from compressor leakage.

A soil sample was collected just underneath the asphalt at an approximate depth of 0.25 to 0.5 feet below ground surface and was analyzed for hydrocarbons using EPA Method 8020. No chemicals were detected above the analytical reporting limit of 0.02 ppm.

#### **Sandblasting Area**

Painting operations taking place south of Building 203 were identified during the Phase I investigation. Materials of environmental interest include sand blasting material, paint, heavy metals in the paint, and paint solvents. To determine whether chemicals have impacted soil or groundwater, installation of monitor wells near the sand hopper and adjacent to the paint storage shed, and hand auger soil borings in the sand blasting, paint application area, and along the causeway where the sand blasting grit was used for fill were recommended. Water and soil samples were analyzed for solvents and hydrocarbons. In addition soil samples were collected of the used grit at the sand hopper and along the causeway and analyzed for heavy metals.

Two monitor wells were installed and groundwater quality samples collected. Monitor well MW-6 is located near the paint storage shed south of Building 203 and MW-8 in the sand blasting area to monitor shallow groundwater. No chemicals were detected in the two water quality samples collected at MW-6 on July 28, 1988 and August 12, 1988. Well MW-8 was sampled 4 times and detected 5 ppb trichloroethylene (TCE), 6.5 ppb tetrachloroethylene (PCE), 2 ppb benzene, and 2 ppb toluene for the July 28, 1988 sample. Primary Drinking Water Standards for the detected chemicals are 5 ppb TCE, 0 ppb PCE (recommended), 5 ppb benzene, and 2000 ppb toluene (recommended). Samples collected at MW-8 on August 4, 1988 detected 0.9 ppb benzene. Samples collected at MW-8 on August 5 and 11, 1988 detected 1.0 ppb benzene.

To assess chemical occurrence in near surface soils associated with painting operations, five hand auger soil borings (HA-4, HA-5, HA-11, HA-12 and HA-15) were drilled and selected soil samples analyzed. In general, soil samples were analyzed for the presence of solvents and hydrocarbons using EPA Methods 8010 and 8020. HA-4 was drilled in an area covered with Black Beauty sand blasting grit, HA-5 was drilled in a grassy area covered with trash and sand blasting grit covered the surface near the paint application area drain where HA-11 was drilled. No volatile chemicals were detected at these three locations. HA-12 was located east of the sand hopper adjacent to the sand blast area and no hydrocarbons were detected and only a trace solvent (trichlorofluoromethane at 0.02 ppm) was detected. HA-15 was also in the sand blasting area and even though strong organic odors were noted in the samplers log, the analysis indicated no solvents present and only xylene at 0.09 ppm.

In addition, three hand auger borings (WG-1, GP-1, and CS-1) were completed in the sandblast waste grit at 0.5 and 1.0 feet to determine if heavy metals were present in excess of soil quality guidelines set to protect marine waters.

Unlike solvents and hydrocarbons, metals occur naturally at low concentrations in the soil at the Lockheed Savannah site. Twelve metals were detected in the soil at three boring locations. Five metals had concentrations in excess of the EPA's designated level to protect marine water, they are chromium, copper, lead, nickel, and zinc. The EPA designated levels to protect marine water are listed in Table 5 along with notation on the boring and depth where metals were in excess of the designated levels. Table 6 is a summary of metals soil quality data.

In summary the VOC and VAC chemicals detected in the sandblasting area included trichloroethylene, tetrachloroethylene, trichlorofluoromethane, benzene, toluene, and total xylene. None were consistently detected above Primary Drinking Water Standards or designated level to protect marine aquatic life. Soil quality results for samples at WG-1, GP-1, and CS-1 detected chromium copper, lead, nickel, and zinc in excess of the designated levels to protect marine waters. However, it appears that removal of the piles and improved waste grit handling procedures would remedy this problem.

#### Hazardous Waste Storage Area

Chemical storage and handling in the hazardous waste storage area located in the south yard was identified during the Phase I investigation as a potential source of chemicals to groundwater and soils. Monitor Well (MW-5) was located adjacent to the east side of the hazardous waste storage area to determine whether storage and/or handling of hazardous wastes have impacted soil or groundwater. Water quality samples were collected on July 28, 1988 and August 11, 1988 and analyzed for solvents and hydrocarbons using EPA Methods 601 and 602, respectively. No chemicals were detected above the reporting limits.

Soil samples were collected at three hand auger soil boring and one grab sample location within the hazardous waste storage area. HA-1 and HA-2 were drilled into bare soil in an area associated with gasoline, diesel, waste solvent, and waste oil storage. HA-3 was drilled next to the containment area drain. A grab sample (GS-6) consisting of surface soil was also collected. Soil samples were analyzed for solvents and hydrocarbons using EPA Methods 8010 and 8020. No chemicals were detected above reporting limits.

#### Crane Parking and Repair Area

Hydraulic oil and diesel leaking from heavy machinery stored in the eastern section of the South Yard were identified during the Phase I investigation. Three hand auger soil borings (HA-8, HA-9, and HA-10) were drilled at subassembly platen 5 on bare soil in a triangular pattern to

TABLE 5  
DESIGNATED METAL LEVELS IN SOIL  
TO PROTECT MARINE WATERS

<u>Chemical</u>	<u>Designated Level (ppm)</u>	<u>Borings where Designated Level was Exceeded</u>
Antimony	NL	None
Arsenic	80	None
Barium	NL	None
Beryllium	NL	None
Cadmium	30	None
Chromium	20	WG-1, GP-1, CS-1 at 0.5 and 1.0 feet
Cobalt	NL	None
Copper	290	WG-1, GP-1, CS-1 at 0.5 and 1.0 feet
Lead	56	WG-1, GP-1, CS-1 at 0.5 and 1.0 feet
Mercury	<del>825</del>	None
Molybdenum	NL	None
Nickel	83	WG-1 and CS-1 at 1.0 feet CS-1 at 0.5 feet
Selenium	540	None
Thallium	NL	None
Vanadium	NL	None
Zinc	2000	WG-1 and CS-1 at 0.5 feet GP-1 and CS-1 at 1.0 feet

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NL - Not Listed

TABLE 6

MARINE SEDIMENT AND BACKGROUND SOILS QUALITY  
SUMMARY OF ANALYTICAL RESULTS<sup>a</sup>  
(in ppm)

Metals Depth Date	GS-1	GS-2	GS-3	GS-4	GS-5	CS-1		WG-1		GP-1	
	0.5' (7/22/88)	0.5' (7/25/88)	0.5' (7/26/88)	0.5' (7/26/88)	0.5' (7/26/88)	0.5'	1.0' (8/11/88)	0.5'	1.0' (8/11/88)	0.5'	1.0' (8/11/88)
Antimony	ND <sup>b</sup>	5	ND	ND	ND	6	ND	ND	ND	ND	ND
Arsenic	7.5	1	0.9	0.9	1	ND	ND	ND	ND	ND	ND
Barium	ND	ND	ND	ND	ND	100	90	80	70	90	80
Beryllium	0.5	ND	ND	ND	ND	5	2	0.9	0.9	0.9	2
Cadmium	ND	ND	ND	ND	ND	0.9	0.8	0.6	0.7	0.5	0.7
Chromium	14	21	14	14	19	71	49	26	24	21	36
Cobalt	2	6	2	2	2	28	19	6	6	5	17
Copper	10	71	7	8	12	2800	1700	730	670	410	960
Lead	10	51	10	10	20	1500	990	230	220	150	640
Mercury	ND	0.24	ND	ND	ND	0.08	0.1	0.1	0.08	0.05	0.05
Molybdenum	ND	ND	ND	ND	ND	60	40	ND	ND	ND	20
Nickel	5	10	4	4	4	440	280	50	62	27	76
Selenium	0.1	ND	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Thallium	20	20	20	20	20	ND	ND	ND	ND	ND	ND
Vanadium	20	10	10	10	20	9	9	7	5	7	10
Zinc	28	240	21	25	35	2900	2200	2100	1500	1600	2100

<sup>a</sup> Only positive results above reporting limits are shown.

<sup>b</sup> Not detected.

determine the lateral and vertical extent of hydrocarbons in soils within this area. Soil samples were collected near the surface and analyzed for hydrocarbons using EPA Method 8020. Ethylbenzene was detected at HA-8 (0.1 ppm) and HA-10 (0.1 ppm) while total xylene was detected in all three borings at concentrations of 1.04 ppm, 0.17 ppm, and 0.93 ppm for HA-8, HA-9, and HA-10 respectively. No other chemicals were detected. The chemicals detected in the soil were at concentrations less than the EPA designated level to protect marine waters.

#### Marine Sediments

Tidal action around the basin resulting in migration of chemicals into basin marine sediments was identified during the Phase I investigation. Chemicals originating from sources north of the Lockheed facility and from Thunderbolt Marine may include solvents, hydrocarbons, and heavy metals. Five marine sediment grab samples (GS-1, GS-2, GS-3, GS-4, and GS-5) were collected along the seawall of the basin at two locations in the North Yard and three locations in the South Yard to determine whether chemicals have migrated into the basin marine sediments.

Water is about 20 feet deep in the basin. ~~A drill rig was used to collect marine sediment samples. This was accomplished by backing the drill rig up to the seawall and free-falling a soil sample catcher into the marine sediments and retrieving the sample "plug".~~ Sediment samples were analyzed for solvents, hydrocarbons, and heavy metals.

No solvents or hydrocarbons were detected above analytical reporting limits in any of the marine sediment samples. As was stated above, heavy metals are naturally occurring chemicals. At GS-2, on the basin's west side, chromium was detected above the designated level to protect marine waters. Chromium, with a designated hazard level of 20 ppm, was detected at a concentration of 21 ppm. Table 6 summarizes the heavy metals results for GS-1 through GS-5.

#### Background Sampling

Past chemical use and dredged material upon which the Lockheed facility is constructed were identified as potential chemical sources during the Phase I investigation. Four groundwater monitor wells were installed and sampled to establish background conditions at the facility. All were constructed using 4 inch PVC screen and blank pipe to monitor shallow groundwater. MW-1 and MW-3 were completed at 16 feet below grade and are located, respectively, north of Building 101 and west of Building 104 in the North Yard. MW-4 and MW-7 were completed at 13 feet below grade and are located west of the transfer pit and alongside Pier 1 in the South Yard.

Water quality samples were collected on July 28, 1988 and August 12, 1988 and were analyzed for solvents and hydrocarbons using EPA methods 601 and 602. No chemicals were detected above reporting limits for MW-3 and MW-7. Tetrachloroethylene was detected at 0.5 ppb (the reporting limit) for

the sample collected from MW-1 on July 28, 1988. Sampling on August 12, 1988 at MW-1 detected no chemicals. Trichloroethylene was detected in MW-4 at 1 ppb (reporting limit 0.6 ppb) on July 28, 1988. Sampling on August 4, 5, and 12, 1988 detected no chemicals.

#### Additional Hydrogeologic Investigations

In addition to soil quality and water quality investigations conducted at the individual wells, the depth to water and general mineral water quality were investigated. The general minerals in the water of the Lockheed Savannah site were investigated to determine if the groundwater is potable or brackish.

The depth to water was measured on August 11 and 12, 1988. The elevations of the wells were surveyed on July 28, 1988. Table 7 is a summary of the well construction details and water level data.

General mineral analyses were performed on groundwater samples collected on August 4 and 5, 1988 from MW-8. Samples were analyzed for the following constituents:

- . Alkalinity,
- . Chloride,
- . Sulfate,
- . pH,
- . Specific Conductance
- . Surfactants, and
- . Total Dissolved Solids

Chloride and total dissolved solids (TDS) are the two constituents that are of primary importance in determining if water is potable. The EPA primary drinking water standard for chloride is 250 ppm and 500 ppm for TDS. The chloride concentration at MW-8 was reported at 400 ppm for the August 4, 1988 sample and 2450 for the August 5, 1988 sample. The TDS at MW-8 was reported at 1330 ppm for the August 4, 1988 sample and 4850 ppm for the August 5, 1988 sample. The chloride and TDS data indicate that the groundwater exceeds the EPA drinking water criteria and that the water is brackish. Brackish water is not suitable for domestic or municipal use. In addition most industrial applications would preclude use of water with the mineral concentrations detected at MW-8. Therefore the groundwater beneath the Lockheed site is of limited beneficial use for domestic, municipal, and industrial water users.

#### SUMMARY

The Lockheed Savannah facility, as was stated earlier, is relatively clean considering the type and size of construction operation. However the use, storage, handling, and disposal practices for hazardous wastes and equipment maintenance procedures could be improved somewhat. Hazardous wastes were stored on soil outside of the designated Hazardous

TABLE 7  
SUMMARY OF WELL CONSTRUCTION AND WATER LEVEL DATA

<u>Monitor Well</u>	<u>Total Depth (feet)</u>	<u>Screened Interval (feet below groundsurface)</u>	<u>Top of Casing Elevation (feet, msl)</u>	<u>Groundwater Depth Below TOC (feet)</u>	<u>Groundwater Elevation (feet, msl)</u>
01	17'	6-16	10.0	7.79 <sup>a</sup>	2.21
02	15'	3-13	10.97	7.13 <sup>b</sup>	3.84
03	17'	6-16'	11.45	6.96 <sup>b</sup>	4.49
04	15'	3-13'	6.84	5.37 <sup>a</sup>	1.47
05	14'	3-13'	6.42	2.88 <sup>b</sup>	3.54
06	14'	3-13'	7.06	5.46 <sup>a</sup>	1.60
07	14'	3-13'	8.25	3.13 <sup>a</sup>	5.12
08	14'	3-13'	7.07	4.75 <sup>a</sup>	2.32

<sup>a</sup> Sounded on 8/12/88

<sup>b</sup> Sounded on 8/11/88

Storage Area, crane and truck maintenance was conducted on bare soil or in an area that drained onto soil, and oil leakage from air compressors did not appear to be cleaned up on a frequent basis. An assessment and sampling program was conducted to investigate the environmental concerns resulting from irregular housekeeping and maintenance practices. Results of the investigation resolved the environmental concerns. Asbestos, soil, groundwater, and marine sediment sampling program conducted in July and August 1988 indicate that Lockheed's operations at the site over the past three years have had little environmental impact with the exception of one area. The waste sandblasting grit was sampled and had elevated concentrations of the heavy metals chromium, copper, lead, nickel, and zinc. The waste grit is presently stockpiled on bare soil. The waste grit should be properly disposed of according to State of Georgia regulations. Sandblasting operations in the future should be conducted such that the waste grit is confined to a specific work area and is cleaned up and disposed of on a regular basis. For example, after removal of the existing grit, the sandblasting area could be paved, the waste grit collected using a front end loader, and it could be stored in commercially available bins. The waste grit could be stored on site for up to 90 days then disposed of at an appropriate Class I disposal site.

The only other environmental concern noted was the presence of asbestos in the floor tiles of Building 101. Considering the building is used solely for warehousing and the percentage of asbestos was reported to be 1 to 5 percent, the floor tile does not appear to represent a significant health threat. However, it is recommended that the floor tiles be removed by a certified asbestos removal contractor. The floor could then be left as a bare concrete slab to match the flooring in the rest of the building.

**APPENDIX A**

**McLAREN ENVIRONMENTAL ENGINEERING  
STANDARD FIELD INVESTIGATION PROCEDURES**

McLAREN ENVIRONMENTAL ENGINEERING  
11101 WHITE ROCK ROAD  
RANCHO CORDOVA, CALIFORNIA 95670

STANDARD FIELD  
INVESTIGATION PROCEDURES

FEBRUARY 1987

## SECTION 1.0

### FIELD SAMPLING PROCEDURES

This document describes typical procedures for constructing monitoring wells and procedures for collection of soil and groundwater samples. The objectives of these field protocols and sampling techniques are to obtain representative samples for analysis and to prevent cross-contamination of the samples. The methods outlined include those used in the past and those expected to be used in the future. Methods have been and will continue to be upgraded as new or better techniques are developed.

McLaren Engineering will be developing sample plans based on data obtained from investigations performed to date. These sample plans will provide specific details regarding the sample locations, rationale for selecting sample locations, number of samples, and types of analyses.

#### 1.1 DRILLING, WELL LOGGING AND MONITORING WELL CONSTRUCTION

##### 1.1.1 Drilling and Abandonment: Equipment and Procedures

This section describes equipment and procedures used in drilling and plugging of soil borings, drilling of deep exploration borings, and drilling for monitor well construction. The principal drilling methods used are auger and mud rotary. Prior to drilling or abandoning any monitor wells on the site, permits will be obtained from the appropriate local regulatory agency.

#### 1.1.1.1 Auger Method (Soil Borings)

Shallow soil borings are drilled using hollow stem augers. Core samples are collected generally at 5-foot intervals using a split-spoon sampler. The split-spoon sampler is driven ahead of the auger bit at each desired sampling depth.

Dry drilling methods are employed at most locations for soil borings. In cases where surface refusal occurs, drilling is attempted at several alternate locations before the site is abandoned.

If the hole is abandoned, the following procedures are followed:

- . Calculate the required volume of grout to fully backfill the borehole, taking into account overages necessary for wash-out zones and potential loss to the formation.
- . Introduce grout into the borehole through a tremie pipe placed inside the auger. Sufficient grout to fill 5 vertical feet of the borehole is added at a time, after which 5 feet of auger flight and tremie pipe are removed from the hole. This continues until all auger flights and tremie pipe are withdrawn from the borehole and the grout has been added to ground surface level.

Allow sufficient time for the grout to slump (one to three days), then additional grout is added as required to fill the borehole to the ground surface.

If the hole is to be completed as a monitor well, the well is constructed by one of two methods:

1) inside the hollow stem flights using the procedures detailed in Section 1.1.5.1.1, or 2) if the hole is determined to be stable, wells will be constructed after the augers are pulled using the procedures detailed in section 1.1.5.1.2. If a zone of saturation is not encountered, the borehole is abandoned and grouted to the surface.

#### 1.1.1.2 Mud Rotary Methods

Procedures for mud rotary drilling are as follows:

If near-surface geologic conditions permit, a 10" diameter hole is drilled to the desired depth using mud rotary techniques.

If near-surface geologic conditions are highly unconsolidated and unstable formations exist, a 12-1/2" inside diameter casing is driven and the inside of the casing "drilled out" using air rotary techniques. The 12-1/2" drive casing is "landed" in more stable formations.

After the 12-1/2" drive casing is landed, mud rotary techniques are used to drill a 10" diameter hole to the desired depth using a tricone bit.

Downhole geophysical logging is conducted as described in Section 1.1.4., if necessary.

Undesirable conditions which may arise during the drilling of deep boring wells include the loss of fluid circulation and borehole wall instability due to the inability of the drilling fluids to effectively seal the borehole walls. Under conditions where the drilling fluid mixtures are insufficient in providing the necessary borehole wall seal, mud additives such as meal, bran or alfalfa are used. These additives are removed by screening and are not used in proposed sampling intervals. Chemical additives are not used for modifying drilling fluid viscosity.

#### 1.1.2 Drilling Equipment Decontamination

Prior to entering the site, all drilling equipment is steam-cleaned to remove oils, chemicals, soils and other debris and to prevent cross-contamination. Additional steam-cleaning is performed to prevent cross-contamination between borings.

#### 1.1.3 Lithologic Logging

Lithologic logging of all boreholes is performed by the on-site geologist or soil scientist based on split-spoon samples (when they are

taken) and cuttings brought to the surface during drilling. The lithologic log heading includes the location of the borehole, the name of the geologist doing the logging, the name of the drill contractor, and the equipment used.

Descriptions of unconsolidated sediment and soil samples include preliminary grain-size classification (based on ASTM Unified Soil Classification), color, consistency, lithology, odor (if present) and degree of moisture (when dry drilling methods are used). Color is based on the Munsell color chart. In the intervals where a split-spoon sample is taken, the blow count for the sample is included on the log.

The memo section on the log may include field data indicating the initial penetration of the saturated zone and any observations relative to drilling conditions.

#### 1.1.4 Geophysical Logging

Downhole geophysical logging is performed on mud rotary boreholes while the hole is still open. Geophysical logging may include caliper log, spontaneous potential log, and electrical resistivity. Radioactive logs may be obtained on the site if it is determined that the technique will provide additional data for geologic correlation. Geophysical logging operations are witnessed by the on-site geologist.

#### 1.1.5 Monitor Well Construction Methods

Monitor wells are installed to provide groundwater level measurements

and to provide points for groundwater sample collection. Well construction methods and materials vary according to geologic conditions, intended monitoring depth, available equipment, and intended well use.

#### 1.1.5.1 Soil Borings Converted to Shallow Monitor Wells

##### 1.1.5.1.1 Soil Borings Converted to Monitor Wells Through the Auger Stem

Soil borings converted to monitor wells are auger borings which encountered groundwater either under perched conditions or in the upper portion of the regional aquifer. Monitor well construction within auger boreholes will follow the guidelines prescribed by the Regional Water Quality Control Board (RWQCB) and/or Local Regulatory Agency and will consist of the following:

- Drilling and sampling to the desired depth:

- Sampling every 5 foot interval in each borehole:

- Determining the size distribution of the well completion zone and designing the well with appropriate screen slot size and filter material for that zone:

- Installing 2 inch I.D. Schedule 40 flush-jointed PVC blank pipe and 2-inch, 0.010" to 0.020" slot Schedule 40 PVC well screen to designed depth. No glue joints will be permitted:

. Installing #3 or #2/12 mesh sand pack through the auger stem to designed level as appropriate;

. Installing a Bentonite seal or #60 mesh graded sand bridge through the auger stem to designed level;

. Installing grout (sanitary seal) at a mix of approximately 5.5 gallons water to 94 pounds cement and 5 pounds bentonite powder by introducing grout into auger flights as per Section 1.1.1.1. If the borehole is determined to be stable above the sand bridge, the auger flights will be removed before grouting, and grout will be placed with a tremie pipe. The local regulatory agency will be contacted at least 24 hours before setting the sanitary seal to provide them an opportunity to inspect grout placement:

. Removing auger flights:

. Installing a locking well cap;

. Covering well with a traffic rated, water tight road box at ground surface level if necessary; and

. Grouting to grade at a later time if necessary.

1.1.5.1.2 Soil Borings Converted to Monitor Wells After Pulling the Augers

If boreholes are determined to be stable by the on-site geologist or soil scientist and if there is sufficient reason to do so, monitor wells may be constructed in the open borehole after pulling the auger flights. Boreholes will be determined to be stable after considering the following:

- Construction details for other monitor wells in the area:

- Borehole lithology;

- If, upon pulling up on the augers, very little, or no, sloughing occurs.

If significant sloughing occurs in the borehole, the hole will be reamed out to total depth and the monitor well will be constructed inside the auger stem.

Monitor well construction within boreholes will follow the guidelines prescribed by the RWQCB and/or local regulatory agency and will consist of the following:

- Drilling and sampling to the desired depth.

- Selecting the zone to be screened.

If backfilling is necessary, neat cement will be mixed, using approximately 5.5 gallons of water with a 94-lb bag of cement, and placed, with a tremie pipe to the desired depth.

Designing the well with perforations and filter material opposite (within) the specified zone.

Pulling the auger flights from the borehole.

Sounding total depth of the borehole. If significant sloughing occurs, see above.

Installing 4 inch inside diameter (ID) Schedule 40 flush-jointed PVC blank pipe and 4 inch. 0.010" to 0.020" slot Schedule 40 PVC well screen to designed depth. No glue joints will be permitted:

Installing #8 or #2/12 mesh sand as a gravel pack as appropriate to designed level using a tremie pipe for placement:

Installing a Bentonite seal or #60 mesh sand as a sand bridge above the gravel pack to the designed level using a tremie pipe for placement if necessary;

Installing a grout mixture (sanitary seal) of approximately 5.5 gallons of water to 94 pounds of cement and 5 pounds bentonite powder, by introducing grout into the borehole through a tremie pipe. The local regulatory agency will be contacted at least 24 hours before setting the sanitary seal to provide them an opportunity to inspect grout placement;

Installing a locking well cap and lock.

If well is located within a street, sidewalk, or parking area, wells will be completed below grade inside a water tight, traffic rated road box at grade.

If well is not located within a street, sidewalk, parking area, or other highly traveled, visible area, the well will be completed above grade with a locking well casing.

#### 1.1.5.2 Soil Borings Converted to Deep Monitor Wells

If it becomes necessary to construct monitor wells in a deeper aquifer, and sealing of the upper aquifer(s) is necessary prior to well completion to prevent cross-contamination between aquifers, the upper aquifer(s) will be sealed using the following method:

Drilling and sampling through the aquifer(s) to be sealed with a small diameter hollow-stem auger:

. Pulling the augers;

. Reaming the hole with a larger diameter auger;

. Pulling the large diameter augers;

. Setting a surface casing in the open borehole through the aquifer(s) to be sealed;

. Grouting the annular space between the casing and the borehole with neat cement (5.5 gallons of water to 94 pounds of cement);

. After the grout has had time to set, reinserting the smaller diameter augers and drilling and sampling to the desired depth;

. Constructing the monitor well as per Sections 1.1.5.1.1 or 1.1.5.1.2.

#### 1.1.6 Monitor Well Construction Materials

Blank pipe (4" ID) for monitor wells is PVC Schedule 40 flush-jointed pipe in 5- or 10-foot lengths. Perforated pipe is 4" ID PVC Schedule 40, 0.010" to 0.020" slotted pipe. All blank and perforated pipe used in well construction is flush-jointed and free of all glues or oils.

Drilling mud used in the mud rotary method is mixed from drilling grade bentonite and water obtained from a suitable groundwater or surface water source.

In mud rotary-drilled wells, the annulus around the perforated interval is packed with suitable gravel pack material. Grout used in the annulus and strata seal is mixed 5.5 gallons of water to 94 pounds cement, and in the surface seal is a mixture of water and concrete mix.

#### 1.1.7 Monitor Well Development

All monitor wells are developed by either bailing, air lifting, or pumping and surging until the turbidity of the water reaches minimal levels. Pumping of the well is performed after surging to remove aerated water before sampling according to methods described in Section 1.3. Auger holes converted to monitoring wells are generally sampled within one week of completion.

#### 1.1.8 Disposal of Cuttings, Drilling Fluid and Development Water

Cuttings from a borehole are generally stockpiled in a suitable location, and samples collected to determine concentrations of hazardous constituents. If concentrations are below hazardous levels, the drill cuttings will be removed to a pre-arranged receptor. If concentrations are above hazardous levels, the cuttings will be removed to a certified Class I facility or aerated on site. All water generated from drilling and sampling operations will be disposed of either into an on site or other approved disposal facility. If

permission is granted by the appropriate agency, water will be discharged to the sanitary sewer and amounts discharged will be recorded. If necessary, liquids will be stockpiled in a tank and removed to a certified Class I facility.

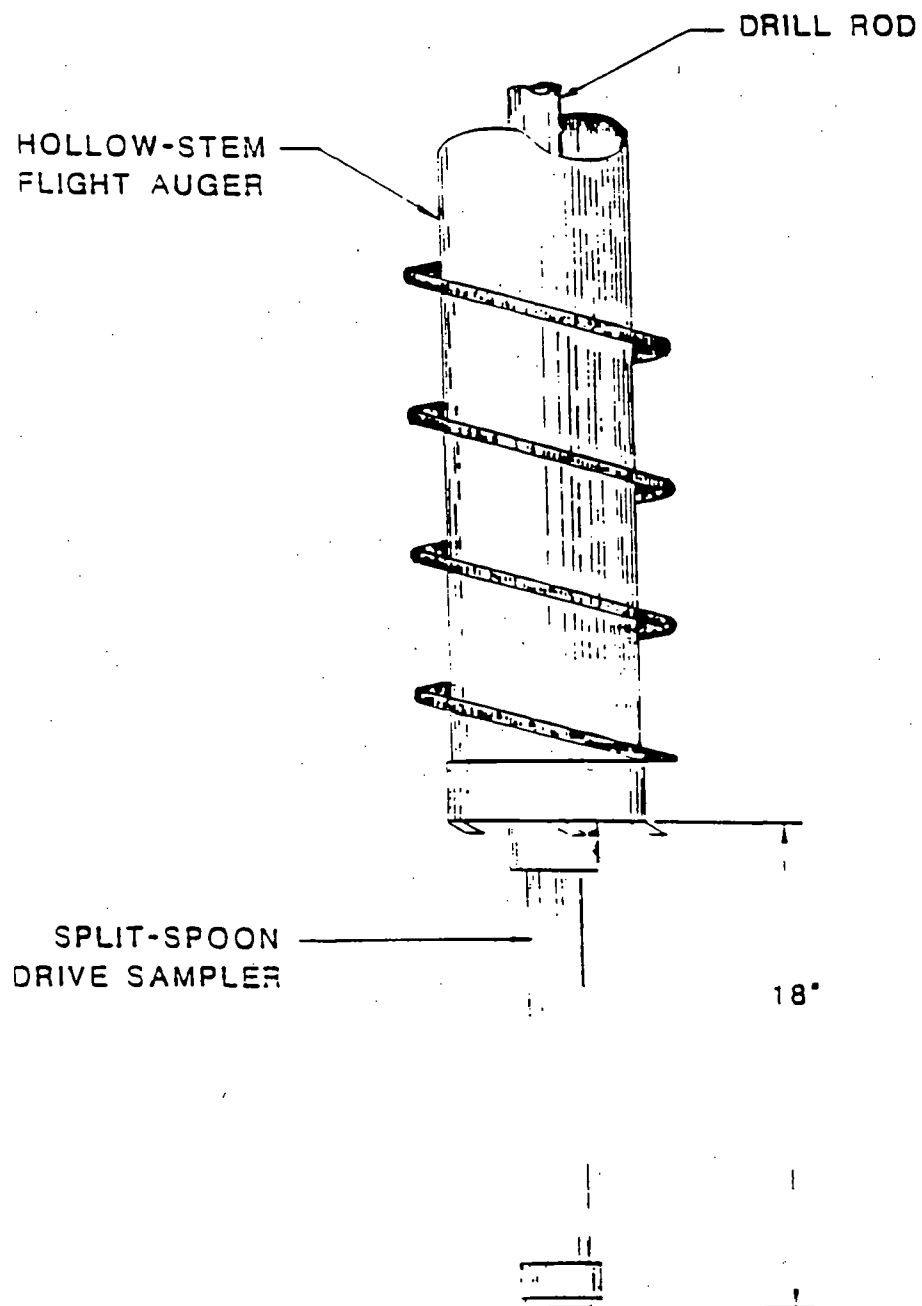
## 1.2 SOIL SAMPLING

Soil samples for chemical analyses and for lithologic description are collected using hollow-stem augers with split-spoon samplers or hand augers. Hollow-stem augers with split-spoon samplers are used to sample soils from ground surface to a depth of approximately 100 feet. If a saturated zone is encountered, sampling is generally continued through the saturated zone. Hand augers are used to collect surface and near surface samples, generally to depths of five feet or less. Equipment preparation, sample collection, sample description, and sample identification procedures for each method are described in the following sections. During sampling a calibrated HNu meter or photoionization detector is used to semi-quantitatively determine the total concentration of volatile organic chemicals in the soils penetrated.

### 5.2.1 Hollow-Stem Auger/Split Spoon Sampling

Hollow-stem augers with split-spoon samplers are used to collect soil samples to a depth of approximately 30 to 100 feet. Soil samples are collected at 5-foot intervals from ground surface to total depth using an 18-inch modified California split-spoon drive sampler, or equivalent, in a hollow-stem auger flight (Figure 1-1).

FIGURE 1-1  
SPLIT-SPOON SAMPLER  
DRIVEN 18" AHEAD OF AUGER BIT



#### 1.2.1.1 Equipment Preparation

Prior to arrival at the sampling site, all sampling equipment is scrubbed in hot water containing soap and trisodium phosphate, rinsed with tap water, rinsed three times with deionized water and air or oven-dried. All sampling equipment is packaged in clean cardboard boxes.

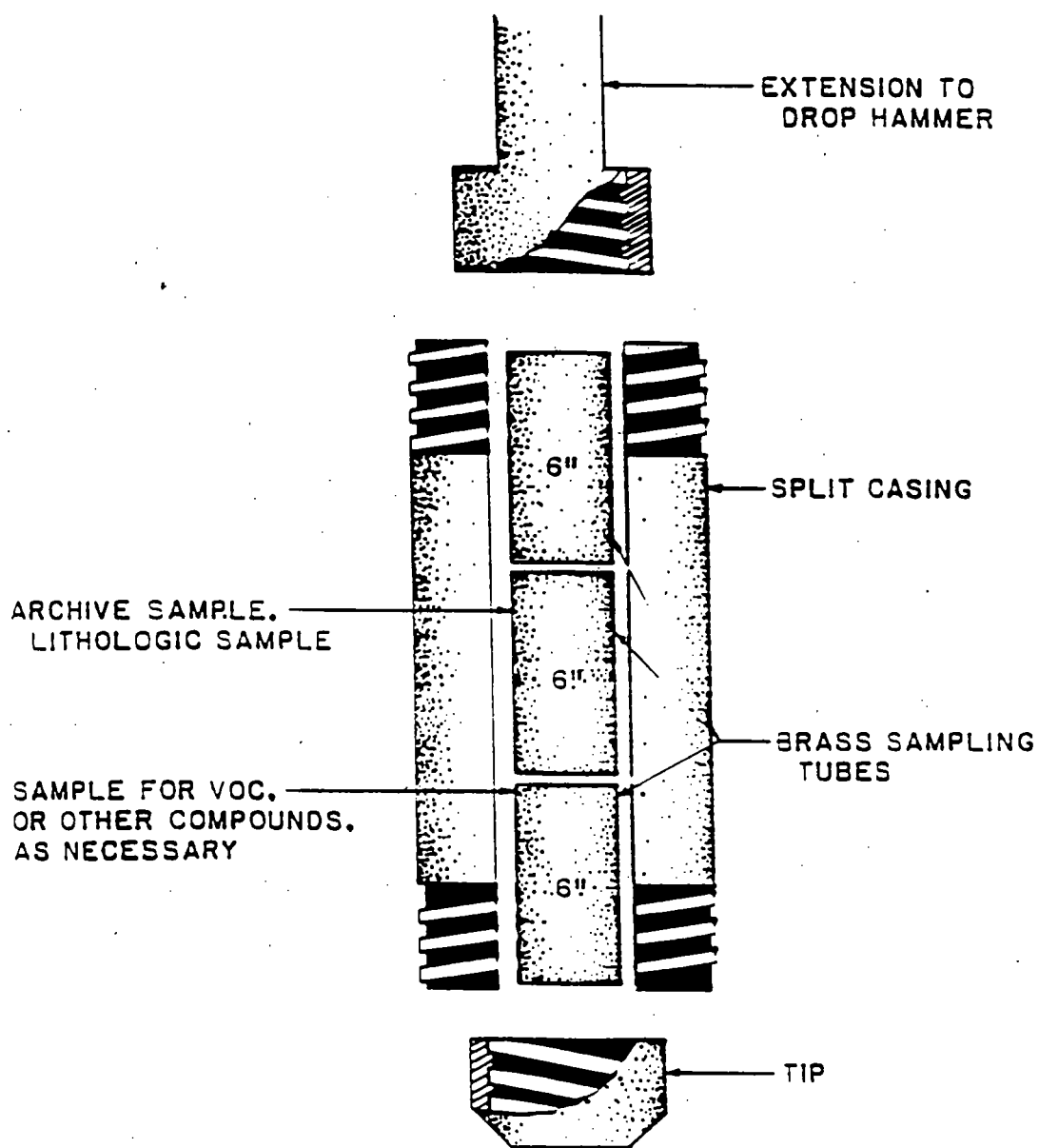
The auger flights, drive shaft and drive sampler are steam cleaned prior to the start of the sampling program. Samplers, auger flights and wash basins are steam cleaned after each hole is completed. When necessary, all threaded joints on the drive sampler, drive shaft and auger stems are lubricated with vegetable oil.

#### 1.2.1.2 Sample Collection

The split-spoon sampler is lined with three 6-inch brass cylinders with a diameter of 2 or 2.5 inches (Figure 1-2). The sampler is lowered into the hole either on a wire line down-hole hammer, or at the end of the drill pipe. The split-spoon sampler is then driven to a depth of 18 inches using a 140 pound drop hammer with a 30 inch fall. The number of blows required to drive the sampler, over 6-inch increments are recorded. The sampler is then removed.

If the sampler is refused or cannot be driven at least 9 inches (refusal occurs when the sample cannot be driven six inches by 100 blows with the drop hammer), the sampler is removed from the borehole, and drilling continues to the next interval.

FIGURE 1-2  
DETAILS OF SPLIT-SPOON  
DRIVE SAMPLER



Upon removal from the borehole, the sampler is split longitudinally. If the sampled interval is designated for chemical analysis, the first six-inch cylinder for volatile organic compound (VOC) analysis is separated from the core by the insertion of metal blades between the brass cylinders. The sample cylinder, with soil intact, is immediately lifted from the core and the ends of the cylinder are sealed with teflon sheeting and plastic end caps. The end caps are sealed to the brass tube with duct tape. A sample label is then attached to the brass tube, with the date collected, sample and boring number, and depth recorded on the label. The samples are then placed in sealed plastic bags, and placed inside a cooler containing ice.

The soil from the six-inch core in the center of the sampler is used for the lithologic description. This information, plus sample information, is recorded on the field data sheet (see Section 1.2.1.3). Sample type, container, preservation methods, and maximum holding time for soils and water are given in Table 1-1.

Soil from within the sampler may be lost when the sampler is being brought to the surface if the material is unconsolidated or very wet. If a sample is lost, a plastic catcher is placed inside the sample tip before the next sample is taken. If the soil is both saturated and unconsolidated, sample collection may not be possible. If the sample cannot be collected, soil descriptions are made on any available material brought to the surface.

TABLE 1-1

## CONTAINERS, PRESERVATION, AND MAXIMUM ALLOWABLE HOLDING TIME

<u>Parameter</u>	<u>Container</u>	<u>Preservation</u>	<u>Holding Time<sup>a</sup></u>
Soil Samples			
Purgeable Halocarbons (EPA Method 8010)	Glass, 40 ml VOA with 10 ml MeOH	4°C	14 days without methanol preservation
Purgeable Aromatics (EPA Method 8020)	Glass, 40 ml VOA with 10 ml MeOH	4°C	14 days without methanol preservation
Nitrosodimethylamine (NDMA)	Glass	4°C	7 days
Polychlorinated Biphenyls (PCB's) (EPA Method 8080)	Glass Teflon-lined top	4°C	Indeterminate
Oil and Grease	Glass/Plastic	4°C	Indeterminate
Ethylene Dibromide (DOHS Methods pg. 301)	Glass, 40 ml VOA vial with 5 ml MeOH	4°C	14 days
Organochlorine Pesticides (EPA Method 8080)	Glass	4°C	Indeterminate
Polynuclear Aromatic Hydrocarbons (EPA 8100)	Glass	4°C	Indeterminate
Volatile Organic Compounds (EPA 624)	Glass, 40 ml VOA with 10 ml MeOH	4°C	14 days without methanol preservation

<sup>a</sup> Reference: EPA SW 846 and McLaren Recommended Procedure

TABLE 1-1

CONTAINERS, PRESERVATION, AND MAXIMUM ALLOWABLE HOLDING TIME  
(Continued)

<u>Parameter</u>	<u>Container</u>	<u>Preservation</u>	<u>Holding Time</u> <sup>a</sup>
Soil Samples (Continued)			
Base/Neutral Acids and Pesticides (EPA 625)	Glass 1 pt. size	4°C	7 days before extraction (14 days after)
Metals (EPA 7000 series)	Glass 1 pt. size		Hg - 28 days Cr VI - 24 hrs.

---

<sup>a</sup> Reference: EPA SW 846 and McLaren Recommended Procedure

After all subsamples have been taken, the split-spoon sampler and brass sample tubes are brushed clean in a solution of trisodium phosphate and rinsed with tap water. Excess moisture is shaken from the sampler. The sampler is rinsed with methanol and rinsed again with deionized water. Clean brass cylinders are inserted, and the sampler is reassembled. Upon completion of sample collection, the auger hole is converted to a shallow monitoring well or backgrouted to the surface with Portland cement.

#### 1.2.1.3 Sample Description

Descriptions of the 18-inch core are recorded on data sheets (Figure 1-3). Descriptions include Munsell color, moisture content, odors, mottling, and any other notable features such as ash deposits, soil structure, roots, crystals, and buried objects. A particle size classification is made in the field using Unified Soil Classification nomenclature.

As soon as the sample is collected in the field, the entire 18-inch core is assigned a unique four-digit number taken from preprinted data sheets. The first and second digits indicate the auger hole number. The last two digits are assigned sequentially. All subsamples taken from the 18-inch core are assigned the same four-digit sample number.

# SOIL LOG DRILLING

SB/MW # \_\_\_\_\_  
# D- \_\_\_\_\_  
Page \_\_\_\_\_ of \_\_\_\_\_  
Sampler: \_\_\_\_\_

PROJECT \_\_\_\_\_ LOCATION \_\_\_\_\_  
ELEVATION \_\_\_\_\_ MONITORING DEVICE \_\_\_\_\_  
SAMPLING DATE(S) \_\_\_\_\_ START \_\_\_\_\_ FINISH \_\_\_\_\_  
SAMPLING METHOD \_\_\_\_\_ SUBCONTRACTOR & EQUIPMENT \_\_\_\_\_  
MEMO \_\_\_\_\_  
\_\_\_\_\_

[illegible]

**APPENDIX B**

**LITHOLOGIC LOGS AND WELL CONSTRUCTION DETAILS**

# SOIL DRILLING LOG

SB/MW # : MW-1  
 # D-  
 Page 1 of 1  
 Sampler: K. McINTYRE

PROJECT	LOCKHEED	LOCATION	THUNDERBOLT, GEORGIA
ELEVATION		MONITORING DEVICE	
SAMPLING DATE(S)	7-25-88	START	0900
SAMPLING METHOD	6 1/4" HOLLOW	FINISH	1030
MEMO	STEM AUGER	SUBCONTRACTOR & EQUIPMENT LAYNE CENTRAL DRILLING CO. INC.	
		CME 55	

Depth Below Surface (ft.)	Penetration Results		Sampler Depth Interval (ft.)	Sample ID #	HNu reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sub-Sample	Borehole Abandonment/ Well Construction Details
	Blows 6"-6"-6"	BPF								
5'						Asphalt	GP			
						Dark grayish brown (10YR 4/2) very gravelly sand, non-plastic, slightly moist.	SP			
						Dark yellowish brown (10YR 4/1) fine sand, moist, non-plastic.	SP			
						Very pale brown (10YR 7/2) coarse sand, non-plastic, moist.	SP			
10'						Light yellowish brown (10YR 6/4) fine sand, non-plastic, saturated.	SP			
						Dark grayish brown (10YR 4/2) fine sand, non-plastic, saturated.	SP			
15'						Brownish yellow (10YR 6/6) sandy silt, plastic, non-sticky, saturated.	CL			
20'										16.0' Well cap
										17.0' T.D.



# SOIL DRILLING LOG

SB/MW # : MW-2  
 # D-  
 Page 1 of 1  
 Sampler: K. McIntyre

PROJECT	LOCKHEED	LOCATION	THUNDERBOLT, GEORGIA
ELEVATION		MONITORING DEVICE	
SAMPLING DATE(S)	7-25-88	START	1145
SAMPLING METHOD	6 1/4" HOLLOW	FINISH	1415
MEMO	STEM AUGERS	SUBCONTRACTOR & EQUIPMENT	LAYNE CENTRAL DRILLING CO. INC.
			CME 55

Depth Below Surface (ft.)	Penetration Results		Sampler Depth Interval (ft.)	Sample ID #	HNU reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sub-Sample	Borehole Abandonment/ Well Construction Details
	Blows 6"-6'-6"	BPF								
5'						Back fill, concrete blocks, bricks, sandy silty clay, moist.	CL			
10'						Black (10YR 2/0) clay, saturated, >10% organic matter, rotten egg odor.	MH			
15'						Dark greenish gray (5GY 4/1) soft sand, saturated.	SP			
20'										



# SOIL DRILLING LOG

SB/MW # : MW-3  
 # D-  
 Page 1 of 1  
 Sampler: K. McIntyre

PROJECT	LOCKHEED	LOCATION	THUNDERBOLT, GEORGIA
ELEVATION		MONITORING DEVICE	
SAMPLING DATE(S)	7-25-88	START	0900
SAMPLING METHOD	6 1/4" HOLLOW	FINISH	1030
MEMO	STEM AUGERS	SUBCONTRACTOR & EQUIPMENT	LAYNE CENTRAL DRILLING CO. INC.
			CME 55

Depth Below Surface (ft.)	Penetration Results		Sampler Depth Interval (ft.)	Sample ID #	HNu reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sub-Sample	Borehole Abandonment/ Well Construction Details
	Blows 6"-6'-6"	BPF								
						Asphalt				
						Road base				
5'						Reddish Brown ( ) moderately dense clay, slightly plastic, very moist.				
						Light yellowish brown (10YR 6/4) soft silty fine sand, non-plastic, moist.				
10'						(10YR 5/3) soft silty sand, non-plastic, moist.				
						Dark grayish brown (10YR 4/2) sandy silty clay, slightly plastic, saturated.				
15'						(5BG 5/1) moderately dense clay, slightly plastic, saturated.				
20'										16.0' Well cap
										17.0' T.D.



# SOIL DRILLING LOG

SB/MW # : MW-4  
 # D-  
 Page 1 of 1  
 Sampler: K. McIntyre

PROJECT	LOCKHEED	LOCATION	THUNDERBOLT, GEORGIA
ELEVATION		MONITORING DEVICE	
SAMPLING DATE(S)	7-26-88	START	1000
SAMPLING METHOD	6 1/4" HOLLOW	FINISH	1040
MEMO	STEM AUGERS	SUBCONTRACTOR & EQUIPMENT LAYNE CENTRAL DRILLING CO. INC.	
		CME 55	

Depth Below Surface (ft.)	Penetration Results		Sampler Depth Interval (ft.)	Sample ID #	HNu reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sub-Sample	Borehole Abandonment/ Well Construction Details
	Blows 6"-6"-6"	BPF								
5'						Asphalt	AC			
						(10YR 5/3) soft sand fill, non-plastic, moist.	SP			
						(5G 6/1) alternating layers of fine sand and clay, saturated.	SP/MH			
10'						(5GY 4/1) soft silty sand, non-plastic, saturated.	SP			
15'										
20'										



# SOIL DRILLING LOG

SB/MW # : MW-5  
 # D-  
 Page 1 of 1  
 Sampler: K. McINTYRE

PROJECT	LOCKHEED	LOCATION	THUNDERBOLT, GEORGIA
ELEVATION		MONITORING DEVICE	
SAMPLING DATE(S)	7-26-88	START	1115 FINISH 1205
SAMPLING METHOD	6 1/4" HOLLOW	SUBCONTRACTOR & EQUIPMENT LAYNE CENTRAL	
MEMO	STEM AUGERS	DRILLING CO. INC.	
CME 55			

Depth Below Surface (ft.)	Penetration Results		Sampler Depth Interval (ft.)	Sample ID #	HNU reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sub-Sample	Borehole Abandonment/ Well Construction Details
	Blows 6"-6"-6"	BPF								
5'						(10YR 3/2) soft silty sand, non-plastic, moist.	SM			
						Fill material bricks, cement block, trash.	SP			
						(5Y 4/1) soft sand with thin layers of moderately dense clay, saturated.				
10'						(5Y 4/1) moderately dense clay, non-plastic, saturated.	MH			
15'										
20'										



# SOIL DRILLING LOG

SB/MW # : MW-6  
 # D-  
 Page 1 of 1  
 Sampler: K. McINTYRE

PROJECT	LOCKHEED	LOCATION	THUNDERBOLT, GEORGIA
ELEVATION	MONITORING DEVICE		
SAMPLING DATE(S)	7-26-88	START	1415 FINISH 1530
SAMPLING METHOD	6 1/4" HOLLOW	SUBCONTRACTOR & EQUIPMENT LAYNE CENTRAL	
MEMO	STEM AUGERS	DRILLING CO. INC.	
CME 55			

Depth Below Surface (ft.)	Penetration Results		Sampler Depth Interval (ft.)	Sample ID #	HNU reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sub-Sample	Borehole Abandonment/ Well Construction Details
	Blows 6"-6"-6"	BPF								
5'						(10YR 5/3) soft silty sand, non-plastic, moist.	SM			
10'						(5G 6/1) moderately dense silty sand, non-plastic, saturated.	SM			
13.0'						(5GY 4/1) soft sandy clay, slightly plastic, saturated.	SC			
14.0'										



# SOIL DRILLING LOG

SB/MW # : MW-7  
 # D-  
 Page 1 of 1  
 Sampler: K. McIntyre

PROJECT	LOCKHEED	LOCATION	THUNDERBOLT, GEORGIA
ELEVATION		MONITORING DEVICE	
SAMPLING DATE(S)	7-26-88	START	1614 FINISH 1720
SAMPLING METHOD	6 1/4" HOLLOW	SUBCONTRACTOR & EQUIPMENT LAYNE CENTRAL	
MEMO	STEM AUGERS	DRILLING CO. INC.	
CME 55			

Depth Below Surface (ft.)	Penetration Results		Sampler Depth Interval (ft.)	Sample ID #	HNu reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sub-Sample	Borehole Abandonment/ Well Construction Details
	Blows 6"-6"-6"	BPF								
5'						(10YR 5/6) sandy silty clay, slightly plastic, moist.	CL			
						(10YR 7/2) coarse sand, non-plastic, saturated.	SP			
10'						(10YR 2/1) moderately dense sandy clay, slightly plastic, saturated.	SC			
15'										
20'										



# SOIL DRILLING LOG

SB/MW # : MW-8  
 # D-  
 Page 1 of 1  
 Sampler: K. McINTYRE

PROJECT LOCKHEED LOCATION THUNDERBOLT, GEORGIA  
 ELEVATION \_\_\_\_\_ MONITORING DEVICE \_\_\_\_\_  
 SAMPLING DATE(S) 7-27-88 START 1730 FINISH 0815  
 SAMPLING METHOD 6 1/4" HOLLOW SUBCONTRACTOR & EQUIPMENT LAYNE CENTRAL  
 MEMO STEM AUGERS DRILLING CO. INC.  
 CME 55

Depth Below Surface (ft.)	Penetration Results		Sampler Depth Interval (ft.)	Sample ID #	HNU reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Sub-Sample	Borehole Abandonment/ Well Construction Details
	Blows 6"-6'-6"	BPF								
5'						Sand blast grit.	SP			
						(10YR 7/4) soft sand, non-plastic, moist.	SP SC			
						(5Y 4/1) moderately dense sandy clay, slightly plastic, moist.	SM			
						(5Y 5/1) soft silty sand, non-plastic, moist.	SC			
						(5Y 4/1) dense sandy clay, slightly plastic, saturated.				
10'										
15'										
20'										



SOIL HAND AUGER DESCRIPTIONS  
ON-SITE THUNDERBOLT, GEORGIA

<u>Location</u>	<u>Depth (feet)</u>	<u>Unified Classification</u>	<u>Description</u>
HA-1	0.0-0.5	SM	Very dark grey, clayey sand, very moist, odors
	0.5-0.7	SP	Very pale brown, soft sand, moist
	0.7-1.7	SP-SM	Gray, silty sand, moist, 50% shells
	1.7-2.6	SM	Dark greenish gray, silty clayey sand, non-plastic, 20% organic fibrous material, very moist
	2.6-3.2	SP	Light gray, loose sand, saturated
HA-2	0.0-0.1	CL	Brown, sandy silty clay
	0.1-0.6	CL	Dark greenish brown, moderately dense sandy silty clay, 80% shells
	0.6-0.9	SP	Light yellowish brown, loose sand
	0.9-1.4	SM	Olive gray, loose silty sand
	1.4-2.4	SM	Olive gray, loose silty sand, 20% shells
	2.4-4.0	SP	Light gray, loose sand, saturated, 20% thin clay layers
HA-3	0.0-0.3	CL	Dark grayish brown, loose sandy silty clay, moist
	0.3-0.8	CL	Brown, loose silty sand, moist
	0.8-1.4	CL	Gray, dense silty clay, moist
	1.4-2.3	CL	Olive gray, dense silty clay, moist
HA-4	0.0-0.3	SP	Black, sand blasting grit, dry
	0.3-1.3	SP	Very pale brown, loose sand
	1.3-1.5	GP	Dark yellowish brown, extremely gravelly sand

SOIL HAND AUGER DESCRIPTIONS  
ON-SITE THUNDERBOLT, GEORGIA  
(Continued)

<u>Location</u>	<u>Depth (feet)</u>	<u>Unified Classification</u>	<u>Description</u>
HA-4	1.5-3.0	GP	Yellowish brown, extremely gravelly sand
HA-5	0.0-0.3	CL	Black, clayey silty sand
	0.3-1.5	SP	Pale brown, friable gravelly sand, moist
	1.5-1.8	SC	Strong brown, friable gravelly sandy clay, moist
	1.8-3.0	SP	Very pale brown, friable gravelly sand
HA-6	0.0-0.3		(Asphalt)
	0.3-0.5		(Road Base)
HA-7	0.0-0.4	SM	Dark reddish gray, friable silty sand, very moist, strong hydrocarbon odors
	0.4-1.2	SP	Greenish gray, very gravelly sand, clay inclusions, very moist, hydrocarbon odors
	1.2-2.4	SP	Light gray to gray, friable sand, very moist, 10% shells
	2.4-3.2	SC	Gray, dense sandy clay, non-plastic, saturated, 10% sand lens
HA-8	0.0-0.5	SC	Black, moderately dense sandy clay
	0.5-1.0	SC	Light yellowish brown, gravelly sandy clay, moist
HA-9	0.0-0.5	SM	Black, friable silty sand, slightly moist
	0.5-1.0	SP-SM	Brownish yellow, friable sand, moist

SOIL HAND AUGER DESCRIPTIONS  
ON-SITE THUNDERBOLT, GEORGIA  
(Continued)

<u>Location</u>	<u>Depth (feet)</u>	<u>Unified Classification</u>	<u>Description</u>
HA-10	0.0-0.5	SM	Very dark gray, dense sandy clay, slightly moist
	0.5-1.0	SC	Brownish yellow, dense sandy clay, slightly plastic, moist
HA-11	0.0-0.7	SP	Black, friable coarse sand, slightly moist
	0.7-1.8	SP	Pale brown, friable fine sand, streaks of dark reddish brown fine sands, moist
	1.8-2.0	SP	Pale brown, friable fine sand, saturated
HA-12	0.0-0.3		(Sand blast grit)
	0.3-1.9	SP	Light yellowish brown, sand, moist, spotted with orange and blue paint
HA-13	0.0-0.5	SM	Very dark gray, clayey sand, very moist
	0.5-3.0	SM	Dark greenish gray, silty sand, saturated
HA-14	0.0-0.3		(Asphalt)
	0.3-0.5		(Road base)
	0.5-3.0	MH	Reddish brown, clay, slightly plastic, very moist
HA-15	0.0-1.0		Sand blasting grit, strong solvent odors

**APPENDIX C**

**SOIL QUALITY DATA**

# **F**orensic Analytical Specialties, Inc.

## Bulk Material Analysis Report

**Client:**

McLaren Environmental Engineering

Client Number: 187

Report Number: 11706

1100 Marina Village Pkwy.

Date Received: 08/01/88

Alameda, CA 94501

Date Examined: 08/01/88

Lab Number: 8835070

Analyst: DN

Sample Number: 003587

Site: Lockheed, GA

Location: Building #102 - Floor.

P.O./Job ID: Lockheed, GA

Gross Description: Off-White floor tile with black mastic (asbestos  
found only in floor tile.

Comments:

**Microscopic Description****TOTAL ASBESTOS PRESENT:**

Chrysotile

1-5

%

Amosite

&lt;1

%

Crocidolite

&lt;1

%

1-5

%

**TOTAL NON-ASBESTOS FIBROUS MATERIAL PRESENT:**

Cellulose

1-5

%

Mineral Wool

&lt;1

%

Polyethylene

&lt;1

%

1-5

%

**TOTAL NON-ASBESTOS NON-FIBROUS MATERIAL PRESENT:**

Unspecified Particulates

90-95

%

90-95

%

Supervisor:



David Kahane

SEE REVERSE FOR EXPLANATION OF TERMS AND REPORTING PRACTICES

# **F**orensic Analytical Specialties, Inc.

## Bulk Material Analysis Report

**Client:**

McLaren Environmental Engineering

1100 Marina Village Pkwy.

Alameda, CA 94501

Client Number: 187

Report Number: 11706

Date Received: 08/01/88

Date Examined: 08/01/88

Lab Number: 8835071

Sample Number: 003588

Site: Lockheed, GA

Analyst: DN

Location: Building #102 - Floor.

P.O./Job ID: Lockheed, GA

Gross Description: Off-White floor tile and associated debris.

Comments:

**Microscopic Description****TOTAL ASBESTOS PRESENT:**

Chrysotile

Trace %

Amosite

&lt;1 %

Crocidolite

&lt;1 %

Trace %

**TOTAL NON-ASBESTOS FIBROUS MATERIAL PRESENT:**

Cellulose

1-5 %

Mineral Wool

&lt;1 %

Polyethylene

&lt;1 %

1-5 %

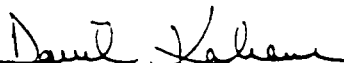
**TOTAL NON-ASBESTOS NON-FIBROUS MATERIAL PRESENT:**

Unspecified Particulates

95-99 %

95-99 %

Supervisor:



David Kahane

SEE REVERSE FOR EXPLANATION OF TERMS AND REPORTING PRACTICES

# **F**orensic Analytical Specialties, Inc.

## Bulk Material Analysis Report

**Client:**

McLaren Environmental Engineering

1100 Marina Village Pkwy.

Alameda, CA 94501

Client Number: 187

Report Number: 11706

Date Received: 08/01/88

Date Examined: 08/01/88

Lab Number: 8835072

Sample Number: 003589

Site: Lockheed, GA

Analyst: DN

Location: Floor.

P.O./Job ID: Lockheed, GA

Gross Description: Brown floor tile with brown mastic (asbestos in  
mastic only).

Comments:

**Microscopic Description****TOTAL ASBESTOS PRESENT:**

Chrysotile

Trace %

Amosite

&lt;1 %

Crocidolite

&lt;1 %

Trace %

**TOTAL NON-ASBESTOS FIBROUS MATERIAL PRESENT:**

Cellulose

1-5 %

Mineral Wool

&lt;1 %

Polyethylene

&lt;1 %

1-5 %

**TOTAL NON-ASBESTOS NON-FIBROUS MATERIAL PRESENT:**

Unspecified Particulates

95-99 %

95-99 %

Supervisor:



David Kahane

SEE REVERSE FOR EXPLANATION OF TERMS AND REPORTING PRACTICES



## EXPLANATION OF TERMS AND REPORTING PRACTICES

### Bulk Materials Analysis Reports

Bulk asbestos samples are examined at Forensic Analytical Specialties, Inc., by Polarized Light Microscopy (PLM) with Dispersion Staining, as recommended by the U.S. Environmental Protection Agency (EPA). Our analysts are trained professionals and our laboratory is accredited by the EPA and Certified by the California Department of Health Services to perform these analyses.

The lower limit of reliable detection for components of a mixture examined by PLM is 1%. When "None Detected" appears on our reports it should be interpreted as meaning that the indicated material was not observed and that, if present, it exists in a concentration below the reliable detection limit. When we observe asbestos or other materials in a concentration we believe to be less than the reliable limit of detection we will report the concentration as "Trace".

The analytical process used results in an estimate of the amount of asbestos present in the sample. Although our analysts are carefully trained and quality control practices are a part of our laboratory routine, some variation in analytical results is to be expected for similar samples. In addition, materials submitted for analysis may not have been homogeneous as originally installed. Consequently, a sample taken from one area may show significantly more or less asbestos than another taken nearby.

The extent of any hazard resultant from the presence of asbestos in a building material is dependent on the extent to which fibers are being freed from the material into air breathed by building occupants. The presence of asbestos is best viewed as a potential hazard which may become an actual hazard if fibers are freed from the material. Forensic Analytical is not able to assess the degree of hazard resultant from materials we examine.

### Airborne Fiber Analysis and TEM Reports

Airborne asbestos sample cassettes are examined at Forensic Analytical Specialties, Inc. (FASI), by two different analytical techniques. Phase Contrast Microscopy (PCM) is used to analyze the filters according to the NIOSH Method 7400 under counting rules "A". Transmission Electron Microscopy (TEM) is used to analyze air filters under Yamate Levels I, II, and III protocols, NIOSH Method 7402, and the AHERA protocol. Our analysts are trained professionals registered by the American Industrial Hygiene Association and our laboratory participates in the NIOSH Proficiency Analytical Testing (PAT) Program.

Our reporting practices for samples analyzed by PCM are as follows. The client and FASI sample numbers, the date, volume, and the total fiber count are first indicated. These figures are used to calculate the fibers-per-cubic centimeter (f/cc) value reported next. The next figure is the limit of detection (LOD) for the sample under the 7400 analytical method. The last figure is the 95% upper confidence limit (UCL) estimate of f/cc, calculated according to the 7400 analytical method from data developed in our laboratory.

For samples analyzed by TEM, the terminology used on the report follows the definitions of the AHERA and Yamate Methods. The client and laboratory sample numbers are reported, as is the total filter area, the area analyzed, and the analytical sensitivity. Fibers and structures counted, fiber and structure concentration, and structure concentration on the filter surface are all reported. These figures are all reported separately for fibers or structures less than and greater than five microns in length, and the total count or concentration. For detailed definitions of these terms, the user is referred to the AHERA protocol.

*Samples submitted to Forensic Analytical Specialties, Inc., are retained in storage for a period of six months following receipt and analysis. Upon prior arrangement, samples can be returned to the client or retained in archival storage for a longer period of time.*

*The customer is solely responsible for the use and the interpretation of Forensic Analytical Specialties, Incorporated's report and test results.*

# Forensic Analytical Specialties, Inc.

**RECEIVED**  
AUG 17 1988  
McLAREN ENVIRONMENTAL  
ENGINEERING

## Bulk Material Analysis

Client:  
McLaren Environmental Engineering

Client Number: 187  
Report Number: 11934  
Date Received: 08/05/88  
Date Examined: 08/08/88

1100 Marina Village Pkwy.  
Alameda, CA 94501

Lab Number: 8837004  
Sample Number: LS-1  
Site: Lockheed/Savannah.

Analyst: DK

Location: Office warehouse/ceiling tiles.

P.O./Job ID: Lockheed Savannah.

Gross Description: Yellow fibrous material with an associated white  
paint layer.

Comments:

### Microscopic Description

#### TOTAL ASBESTOS PRESENT:

Chrysotile	Non-Det. %
Amosite	Non-Det. %
Crocidolite	Non-Det. %
	%

Non-Det. %

#### TOTAL NON-ASBESTOS FIBROUS MATERIAL PRESENT:

Cellulose	Trace	%
Mineral Wool	85-90	%
Polyethylene	Non-Det.	%
		%

85-90 %

#### TOTAL NON-ASBESTOS NON-FIBROUS MATERIAL PRESENT:

Unspecified Particulates	5-10	%
Non-Fibrous Actinolite	1-5	%
		%
		%

10-15 %

Supervisor: \_\_\_\_\_

*David Kahane*  
David Kahane

SEE REVERSE FOR EXPLANATION OF TERMS AND REPORTING PRACTICES

Consulting and Laboratory Services in the Forensic and Environmental Health Sciences

3777 Depot Road, Suite 406 - 408, Hayward, CA 94545 415/887-8828 FAX 415/887-4218

2 208326

Lockheed-Savannah

SAMPLES TAKEN BY:

GEN. DAVIS  
 Here Davis

FIELD DISPOSITION:

SECURED ☒ YESFREEZER ☐ ID \_\_\_\_\_

☐ NO

Gen. David Davis

8/4/88 2:20

1

1

METHOD OF SHIPMENT:

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ID \_\_\_\_\_

SECURED

FREEZER      ID \_\_\_\_\_

111

CABINET ID \_\_\_\_\_

YES NO

• PRINT NAME AFTER SIGNATURE



**McLaren Environmental Engineering**

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13751

Sample  
Location: SB3 3.5' - 1.0'

Date  
Collected: 7/25/88

Sample  
Number: 3976

Date  
Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.04	0.04
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.04	0.04
Bromoform	< 0.04	0.04
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 98%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Berkeley, California, CA 94720

(415) 528-2606

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13764

Sample

Date

Location: HA2 3.0' - 3.2'

Collected: 7/23/88

Sample

Date

Number: 20168

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.04	0.04
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.04	0.04
Bromoform	< 0.04	0.04
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 104%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

San Diego, California CA 92120

(619) 572-2608

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13766

Sample

Date

Location: HA4 0.5' - 1.0'

Collected: 7/23/88

Sample

Date

Number: 20175

Analyzed: 7/28/88

	Analyte	Reporting
	Concentration	Limit
	ug/g	ug/g
	(ppm)	(ppm)
Vinyl Chloride	< 0.02	0.02
Trichlorofluoromethane	< 0.01	0.01
1,1-Dichloroethylene	< 0.01	0.01
1,1-Dichloroethane	< 0.01	0.01
Trans-1,2-Dichloroethylene	< 0.01	0.01
Chloroform	< 0.01	0.01
1,2-Dichloroethane	< 0.01	0.01
1,1,1-Trichloroethane	< 0.01	0.01
Carbon Tetrachloride	< 0.01	0.01
Bromodichloromethane	< 0.01	0.01
1,2-Dichloropropane	< 0.01	0.01
Trans-1,3-Dichloropropylene	< 0.01	0.01
Trichloroethylene	< 0.01	0.01
Cis-1,3-Dichloropropylene	< 0.01	0.01
1,1,2-Trichloroethane	< 0.01	0.01
Chlorodibromomethane	< 0.02	0.02
Bromoform	< 0.02	0.02
Tetrachloroethylene	< 0.01	0.01
1,1,2,2-Tetrachloroethane	< 0.01	0.01

Surrogate recovery (percent) 100%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Oak Road

Berkeley, California CA 94702

(415) 528-2606

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13768

Sample

Location: HA5 0.5' - 1.0'

Date

Collected: 7/23/88

Sample

Number: 20183

Date

Analyzed: 7/28/88

	Analyte	Reporting
	Concentration	Limit
	ug/g	ug/g
	(ppm)	(ppm)
Vinyl Chloride	< 0.03	0.03
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.03	0.03
Bromoform	< 0.03	0.03
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 103%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road, Danvers, California 95623 (916) 629-2606

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13770

Sample  
Location: Hall 2.5'- 3.0'

Date  
Collected: 7/23/88

Sample  
Number: 20196

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.02	0.02
Trichlorofluoromethane	< 0.01	0.01
1,1-Dichloroethylene	< 0.01	0.01
1,1-Dichloroethane	< 0.01	0.01
Trans-1,2-Dichloroethylene	< 0.01	0.01
Chloroform	< 0.01	0.01
1,2-Dichloroethane	< 0.01	0.01
1,1,1-Trichloroethane	< 0.01	0.01
Carbon Tetrachloride	< 0.01	0.01
Bromodichloromethane	< 0.01	0.01
1,2-Dichloropropane	< 0.01	0.01
Trans-1,3-Dichloropropylene	< 0.01	0.01
Trichloroethylene	< 0.01	0.01
Cis-1,3-Dichloropropylene	< 0.01	0.01
1,1,2-Trichloroethane	< 0.01	0.01
Chlorodibromomethane	< 0.02	0.02
Bromoform	< 0.02	0.02
Tetrachloroethylene	< 0.01	0.01
1,1,2,2-Tetrachloroethane	< 0.01	0.01

Surrogate recovery (percent) 101%

Comments:

Analyst: S. Pederson Reviewed by: S. Azimi-Galloway Date: 7/28/88  
S. Pederson S. Azimi-Galloway

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova CA 95670 (916) 638-3696

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13745

Sample

Location: HA12 0.5'- 1.0'

Date

Collected: 7/25/88

Sample

Number: 3951

Date

Analyzed: 7/28/88

Analyte	Concentration	Reporting
	ug/g	Limit
	(ppm)	ug/g
		(ppm)
Vinyl Chloride	< 0.02	0.02
Trichlorofluoromethane	0.02	0.01
1,1-Dichloroethylene	< 0.01	0.01
1,1-Dichloroethane	< 0.01	0.01
Trans-1,2-Dichloroethylene	< 0.01	0.01
Chloroform	< 0.01	0.01
1,2-Dichloroethane	< 0.01	0.01
1,1,1-Trichloroethane	< 0.01	0.01
Carbon Tetrachloride	< 0.01	0.01
Bromodichloromethane	< 0.01	0.01
1,2-Dichloropropane	< 0.01	0.01
Trans-1,3-Dichloropropylene	< 0.01	0.01
Trichloroethylene	< 0.01	0.01
Cis-1,3-Dichloropropylene	< 0.01	0.01
1,1,2-Trichloroethane	< 0.01	0.01
Chlorodibromomethane	< 0.02	0.02
Bromoform	< 0.02	0.02
Tetrachloroethylene	< 0.01	0.01
1,1,2,2-Tetrachloroethane	< 0.01	0.01

Surrogate recovery (percent) 94%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 838-3606

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13795

Sample  
Location: HA13 0.5' - 1.0'

Date  
Collected: 7/27/88

Sample  
Number: 3579

Date  
Analyzed: 7/28/88

	Analyte Concentration	Reporting Limit
	ug/g (ppm)	ug/g (ppm)
Vinyl Chloride	< 0.3	0.3
Trichlorofluoromethane	< 0.2	0.2
1,1-Dichloroethylene	< 0.2	0.2
1,1-Dichloroethane	< 0.2	0.2
Trans-1,2-Dichloroethylene	< 0.2	0.2
Chloroform	< 0.2	0.2
1,2-Dichloroethane	< 0.2	0.2
1,1,1-Trichloroethane	< 0.2	0.2
Carbon Tetrachloride	< 0.2	0.2
Bromodichloromethane	< 0.2	0.2
1,2-Dichloropropane	< 0.2	0.2
Trans-1,3-Dichloropropylene	< 0.2	0.2
Trichloroethylene	< 0.2	0.2
Cis-1,3-Dichloropropylene	< 0.2	0.2
1,1,2-Trichloroethane	< 0.2	0.2
Chlorodibromomethane	< 0.3	0.3
Bromoform	< 0.3	0.3
Tetrachloroethylene	< 0.2	0.2
1,1,2,2-Tetrachloroethane	< 0.2	0.2

Surrogate recovery (percent) 101%

Comments: 1:10 dilution used in analysis.

Analyst: Marjorie A. Lopez Reviewed by: S. Azimi-Galloway Date: 7/29  
M.A. Lopez

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-2606

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13797

Sample

Location: HA13 2.5' - 3.0'

Date

Collected: 7/27/88

Sample

Number: 3583

Date

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.3	0.3
Trichlorofluoromethane	< 0.2	0.2
1,1-Dichloroethylene	< 0.2	0.2
1,1-Dichloroethane	< 0.2	0.2
Trans-1,2-Dichloroethylene	< 0.2	0.2
Chloroform	< 0.2	0.2
1,2-Dichloroethane	< 0.2	0.2
1,1,1-Trichloroethane	< 0.2	0.2
Carbon Tetrachloride	< 0.2	0.2
Bromodichloromethane	< 0.2	0.2
1,2-Dichloropropane	< 0.2	0.2
Trans-1,3-Dichloropropylene	< 0.2	0.2
Trichloroethylene	< 0.2	0.2
Cis-1,3-Dichloropropylene	< 0.2	0.2
1,1,2-Trichloroethane	< 0.2	0.2
Chlorodibromomethane	< 0.3	0.3
Bromoform	< 0.3	0.3
Tetrachloroethylene	< 0.2	0.2
1,1,2,2-Tetrachloroethane	< 0.2	0.2

Surrogate recovery (percent) 91%

Comments: 1:10 dilution used in analysis. Dilution necessary due to matrix interference.

Analyst: Marion A. Lopez  
H.A. Lopez

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/29

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 629-3606

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13747

Sample

Location: HA14 0.5' - 1.0'

Date

Collected: 7/25/88

Sample

Number: 3959

Date

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.04	0.04
Trichlorofluoromethane	0.03	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.04	0.04
Bromoform	< 0.04	0.04
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 95%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Bennington, CA 95520

(916) 629-2806

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13749

Sample

Date

Location: HA14 2.5' - 3.0'

Collected: 7/25/88

Sample

Date

Number: 3968

Analyzed: 7/27/88

	Analyte	Reporting
	Concentration	Limit
	ug/g	ug/g
	(ppm)	(ppm)
Vinyl Chloride	< 0.02	0.02
Trichlorofluoromethane	< 0.01	0.01
1,1-Dichloroethylene	< 0.01	0.01
1,1-Dichloroethane	< 0.01	0.01
Trans-1,2-Dichloroethylene	< 0.01	0.01
Chloroform	< 0.01	0.01
1,2-Dichloroethane	< 0.01	0.01
1,1,1-Trichloroethane	< 0.01	0.01
Carbon Tetrachloride	< 0.01	0.01
Bromodichloromethane	< 0.01	0.01
1,2-Dichloropropane	< 0.01	0.01
Trans-1,3-Dichloropropylene	< 0.01	0.01
Trichloroethylene	< 0.01	0.01
Cis-1,3-Dichloropropylene	< 0.01	0.01
1,1,2-Trichloroethane	< 0.01	0.01
Chlorodibromomethane	< 0.02	0.02
Bromoform	< 0.02	0.02
Tetrachloroethylene	< 0.01	0.01
1,1,2,2-Tetrachloroethane	< 0.01	0.01

Surrogate recovery (percent) 94%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 632-2608

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13790

Sample  
Location: HA15

Date  
Collected: 7/27/88

Sample  
Number: 3567

Date  
Analyzed: 7/29/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.02	0.02
Trichlorofluoromethane	< 0.01	0.01
1,1-Dichloroethylene	< 0.01	0.01
1,1-Dichloroethane	< 0.01	0.01
Trans-1,2-Dichloroethylene	< 0.01	0.01
Chloroform	< 0.01	0.01
1,2-Dichloroethane	< 0.01	0.01
1,1,1-Trichloroethane	< 0.01	0.01
Carbon Tetrachloride	< 0.01	0.01
Bromodichloromethane	< 0.01	0.01
1,2-Dichloropropane	< 0.01	0.01
Trans-1,3-Dichloropropylene	< 0.01	0.01
Trichloroethylene	< 0.01	0.01
Cis-1,3-Dichloropropylene	< 0.01	0.01
1,1,2-Trichloroethane	< 0.01	0.01
Chlorodibromomethane	< 0.02	0.02
Bromoform	< 0.02	0.02
Tetrachloroethylene	< 0.01	0.01
1,1,2,2-Tetrachloroethane	< 0.01	0.01

Surrogate recovery (percent) 100%

Comments:

Analyst: Marjorie A. Lopez  
M.A. Lopez

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/29

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 838-7606

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13916

Sample

Location: HA17 1.0-1.3

Date

Collected: 7/29/88

Sample

Number: 3590

Date

Analyzed: 8/1/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.03	0.03
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.03	0.03
Bromoform	< 0.03	0.03
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 104%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/2

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Bennington, CA 95520

(415) 629-2606

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13792

Sample  
Location: GS6

Date  
Collected: 7/27/88

Sample  
Number: 3571

Date  
Analyzed: 7/28/88

	Analyte Concentration	Reporting Limit
	ug/g (ppm)	ug/g (ppm)
Vinyl Chloride	< 0.02	0.02
Trichlorofluoromethane	< 0.01	0.01
1,1-Dichloroethylene	< 0.01	0.01
1,1-Dichloroethane	< 0.01	0.01
Trans-1,2-Dichloroethylene	< 0.01	0.01
Chloroform	< 0.01	0.01
1,2-Dichloroethane	< 0.01	0.01
1,1,1-Trichloroethane	< 0.01	0.01
Carbon Tetrachloride	< 0.01	0.01
Bromodichloromethane	< 0.01	0.01
1,2-Dichloropropane	< 0.01	0.01
Trans-1,3-Dichloropropylene	< 0.01	0.01
Trichloroethylene	< 0.01	0.01
Cis-1,3-Dichloropropylene	< 0.01	0.01
1,1,2-Trichloroethane	< 0.01	0.01
Chlorodibromomethane	< 0.02	0.02
Bromoform	< 0.02	0.02
Tetrachloroethylene	< 0.01	0.01
1,1,2,2-Tetrachloroethane	< 0.01	0.01

Surrogate recovery (percent) 100%

Comments:

Analyst: Manjiv A. Lopez  
M.A. Lopez

Reviewed by: S. Azimi-Galloway

Date: 7/29

Laboratory Supervisor: R. J. Galloway



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 632-3608

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13752

Sample

Location: SB 3.5' - 1.0'

Date

Collected: 7/25/88

Sample

Number: 3978

Date

Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 93%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 638-2606

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13763

Sample  
Location: HA1 3.0' - 3.2'

Date  
Collected: 7/22/88

Sample  
Number: 20166

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 103%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 632-3808

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13765

Sample

Location: HA3 3.0' - 3.2'

Date

Collected: 7/23/88

Sample

Number: 20173

Date

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 96%

Comments: Multiple unidentified peaks on sample chromatogram.

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 628-2606

**VOLATILE AROMATIC COMPOUNDS**  
**EPA METHOD 8020**

Project: Lockheed, Ga.

Lab ID: 13767

Sample

Location: HA4 2.5' - 3.0'

Date

Collected: 7/23/88

Sample

Number: 20177

Date

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.01	0.01
Toluene	< 0.01	0.01
Ethylbenzene	< 0.01	0.01
p-Xylene	< 0.01	0.01
m-Xylene	< 0.01	0.01
o-Xylene	< 0.01	0.01
Chlorobenzene	< 0.01	0.01
1,2-Dichlorobenzene	< 0.01	0.01
1,3-Dichlorobenzene	< 0.01	0.01
1,4-Dichlorobenzene	< 0.01	0.01

Surrogate recovery (percent)      93%

Comments: Multiple unidentified peaks on sample chromatogram.

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 638-3696

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13769

Sample  
Location: HA5 0.5' - 1.0'

Date  
Collected: 7/23/88

Sample  
Number: 20185

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 84%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Berkeley, California CA 94701 (415) 528-2608

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13794

Sample

Location: HA6 0.5' - 1.0'

Date

Collected: 7/27/88

Sample

Number: 3575

Date

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 92%

Comments:

Analyst: Marino A. Lopez  
M.A. Lopez

Reviewed by: S. Azimi-Galloway

Date: 7/29/88  
S. Azimi-Galloway

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road, Berkeley, CA 94704 (415) 628-2800

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13756

Sample  
Location: HA7 3.0' - 3.2'

Date  
Collected: 7/22/88

Sample  
Number: 20151

Date  
Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 90%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 Wilshire Blvd., Suite 200, Los Angeles, CA 90024 (213) 520-2500

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13757

Sample  
Location: HAS 0.4' - 0.5'

Date  
Collected: 7/22/88

Sample  
Number: 20155

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.01	0.01
Toluene	< 0.01	0.01
Ethylbenzene	0.1	0.01
p-Xylene	0.54	0.01
m-Xylene	*	0.01
o-Xylene	0.50	0.01
Chlorobenzene	< 0.01	0.01
1,2-Dichlorobenzene	< 0.01	0.01
1,3-Dichlorobenzene	< 0.01	0.01
1,4-Dichlorobenzene	< 0.01	0.01

Surrogate recovery (percent) 91%

Comments: \* Compound coelutes with p-xylene.

Multiple unidentified peaks on sample chromatogram.  
GC/MS Library Search may be used for identification.

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 Wilshire Blvd. Santa Monica, CA 90403 (310) 328-2000

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13761

Sample  
Location: HA9 0.4' - 0.5'

Date  
Collected: 7/22/88

Sample  
Number: 20159

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	0.07	0.02
m-Xylene	*	0.02
o-Xylene	0.1	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 93%

Comments: \* Compound coelutes with p-xylene.

Multiple unidentified peaks on sample chromatogram.

Confirmation not possible due to matrix difficulties  
with foam in sample.

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 Wilshire Blvd.

Beverly Hills, CA 90210

(415) 528-2505

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13762

Sample  
Location: HA10

Date  
Collected: 7/22/88

Sample  
Number: 20161

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	0.1	0.02
p-Xylene	0.57	0.02
m-Xylene	*	0.02
o-Xylene	0.36	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 95%

Comments: \* Compound coelutes with p-xylene.

Multiple unidentified peaks on sample chromatogram.

Analyst: S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road, Berkeley, CA 94704 (415) 622-2606

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13771

Sample

Location: HALL 2.5' - 3.0'

Date

Collected: 7/23/88

Sample

Number: 20197

Date

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.01	0.01
Toluene	< 0.01	0.01
Ethylbenzene	< 0.01	0.01
p-Xylene	< 0.01	0.01
m-Xylene	< 0.01	0.01
o-Xylene	< 0.01	0.01
Chlorobenzene	< 0.01	0.01
1,2-Dichlorobenzene	< 0.01	0.01
1,3-Dichlorobenzene	< 0.01	0.01
1,4-Dichlorobenzene	< 0.01	0.01

Surrogate recovery (percent) 90%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Beneta Canyon, CA 95570

(916) 622-6606

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13746

Sample

Date

Location: HA12 0.5' - 1.0'

Collected: 7/25/88

Sample

Date

Number: 3953

Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.01	0.01
Toluene	< 0.01	0.01
Ethylbenzene	< 0.01	0.01
p-Xylene	< 0.01	0.01
m-Xylene	< 0.01	0.01
o-Xylene	< 0.01	0.01
Chlorobenzene	< 0.01	0.01
1,2-Dichlorobenzene	< 0.01	0.01
1,3-Dichlorobenzene	< 0.01	0.01
1,4-Dichlorobenzene	< 0.01	0.01

Surrogate recovery (percent) 96%

Comments: Multiple unidentified peaks on sample chromatogram.  
GCMS Library Search may be run for identification.

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 Wilshire Blvd. Suite 200 Los Angeles, CA 90025 (310) 552-8888

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13796

Sample

Location: HA13 0.5' - 1.0'

Date

Collected: 7/27/88

Sample

Number: 3581

Date

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.2	0.2
Toluene	< 0.2	0.2
Ethylbenzene	0.2	0.2
p-Xylene	*	0.2
m-Xylene	0.8	0.2
o-Xylene	0.7	0.2
Chlorobenzene	< 0.2	0.2
1,2-Dichlorobenzene	< 0.2	0.2
1,3-Dichlorobenzene	< 0.2	0.2
1,4-Dichlorobenzene	< 0.2	0.2

Surrogate recovery (percent) 89%

Comments: 1:10 dilution used in analysis.

\*Compound coelutes with m-xylene.

Analyst: Marcia A. Lopez  
M.A. Lopez

Reviewed by: S. Azimi-Galloway Date: 7/29/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road, Berkeley, CA 94706 (415) 628-2828

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13798

Sample

Location: HA13 2.5' - 3.0'

Date

Collected: 7/27/88

Sample

Number: 3585

Date

Analyzed: 7/29/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.2	0.2
Toluene	< 0.2	0.2
Ethylbenzene	< 0.2	0.2
p-Xylene	< 0.2	0.2
m-Xylene	< 0.2	0.2
o-Xylene	< 0.2	0.2
Chlorobenzene	< 0.2	0.2
1,2-Dichlorobenzene	< 0.2	0.2
1,3-Dichlorobenzene	< 0.2	0.2
1,4-Dichlorobenzene	< 0.2	0.2

Surrogate recovery (percent) 93%

Comments: 1:10 dilution used in analysis.

Analyst: Marjorie A. Lopez  
M.A. Lopez

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/29

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13748

Sample

Location: HA14 0.5' - 1.0'

Date

Collected: 7/25/88

Sample

Number: 3961

Date

Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 92%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13750

Sample

Location: HA14 2.5'- 3.0'

Date

Collected: 7/25/88

Sample

Number: 3970

Date

Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.01	0.01
Toluene	< 0.01	0.01
Ethylbenzene	< 0.01	0.01
p-Xylene	< 0.01	0.01
m-Xylene	< 0.01	0.01
o-Xylene	< 0.01	0.01
Chlorobenzene	< 0.01	0.01
1,2-Dichlorobenzene	< 0.01	0.01
1,3-Dichlorobenzene	< 0.01	0.01
1,4-Dichlorobenzene	< 0.01	0.01

Surrogate recovery (percent) 91%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 7/28

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

San Jose, CA 95120

(415) 852-0500

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13791

Sample  
Location: HA15

Date  
Collected: 7/27/88

Sample  
Number: 3569

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.01	0.01
Toluene	< 0.01	0.01
Ethylbenzene	< 0.01	0.01
p-Xylene	*	0.01
m-Xylene	0.02	0.01
o-Xylene	0.07	0.01
Chlorobenzene	< 0.01	0.01
1,2-Dichlorobenzene	< 0.01	0.01
1,3-Dichlorobenzene	< 0.01	0.01
1,4-Dichlorobenzene	< 0.01	0.01

Surrogate recovery (percent) 90%

Comments: Multiple unidentified peaks on sample chromatogram.

\* Compound coelutes with m-xylene.

Analyst: Marisio Lopez Reviewed by: M. Lopez for S. Galloway Date: 7/29  
M.A. Lopez S. Azimi-Galloway

Laboratory Supervisor: REXAWES



McLaren Analytical Laboratory

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 629-2606

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13917

Sample  
Location: HA17 1.0-1.3

Date  
Collected: 7/29/88

Sample  
Number: 3592

Date  
Analyzed: 8/2/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	0.07	0.02
m-Xylene	*	0.02
o-Xylene	0.04	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 92%

Comments: \* Compound coelutes with p-xylene.

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/2/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-2828

# McLaren Analytical Laboratory

## Chain of Custody Record

№ 208361

4/9

Check with Steve Carlton

24 hr Push

PROJECT DESIGNATION Lockheed, Georgia

SAMPLES TAKEN BY:\*

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
	GS1 Sediment	22 7/25/86				X	3997	40 ml vial	8010 (1375)
	↓	↓				↓	3998	↓	spore
							3999	↓	8020 (1375)
							4000	baggie	Metals (1375)
	HA7 3.0-3.2						20151	40 ml vial	8020 (1375)
							20152		spore
	HA8 0.4-0.5'						20153		<del>8010</del> Archive
	HA8 0.4-0.5						20154		Spore
	↓	↓				↓	20155	↓	8020 (1375)
						↓	20156	↓	Spore

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

Keith

RECEIVED BY:\*

DATE/TIME

Michael McIntyre McIntyre

7/26/88 1800

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

RECEIVED FOR LABORATORY BY:\*

Michael A. Newberry

DATE/TIME

7-27-88 1:00

METHOD OF SHIPMENT:

Fed Ex

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

YES

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

5/9

208362

Check with Steve Corlton

24 hr Rush

Keith

PROJECT DESIGNATION Lockhead, Georgia

SAMPLES TAKEN BY: Keith McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER COMP	SOIL GRAB			
	HA 9 0.4-0.5	7/22/88			X	20157	40ml VOA	8010 Archive
						20158		spare
						20159		8020 (1376)
						20160		spare
	HA 10					20161		8020 (137)
						20162		spare
	Sample Blank					20163		save
	HA 1 3.0-3.2	7/23/88				20164		8010 Archive
						20165		spare
						20166		8020 (137)

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

Keith

RECEIVED BY:\*

DATE/TIME

Keith McIntyre

\_\_\_\_\_

7/26/88 180

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

RECEIVED FOR LABORATORY BY:\*

Michael D. Newbury

DATE/TIME

7-27-88 16:

METHOD OF SHIPMENT:

Fed Ex

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECUR

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

6/9 208363

Check with Steve Corlton

24 hr Rush

PROJECT DESIGNATION Lockheed, Georgia

SAMPLES TAKEN BY: Keith McIntyre *Karl*

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
	HA 1 3.0-3.2	7/23/88		COMP	GRAB			
	HA 2 3.0-3.2					20167	40ml UOA	Spore
	HA 2 ↓					20168		8010 (1376)
	↓					20169		Spore
						20170		8030 Archive
						20171		Spore
	Sample Blank					20172		Spore
	HA 3 3.0-3.2					20173		8020 (1376)
	↓					20174		Spore
	HA 4 0.5-1.0					20175		8010 (1376)
	↓					20176		Spore

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY: Keith

RECEIVED BY: \_\_\_\_\_

DATE/TIME

Keith McIntyre

7/26/88 / 180

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RECEIVED FOR LABORATORY BY: Michael A. Newberry

DATE/TIME

7-27-88 16:00

METHOD OF SHIPMENT: Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14324

Sample

Location: MW-8 MW-8

Date

Collected: 8/11/88

Sample

Number: 94259-62

Date

Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 110%

Comments: Unidentified peak at 5.21 minutes that is 100% of the surrogate.

Analyst: S. Pederson

S. Pederson

Reviewed by: C.R. 700

S. Azimi-Galloway

Date: 8/13/88

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed-Savannah

Lab ID: 14150

Sample

Date

Location: MW-8 MW-8

Collected: 8/5/88

Sample

Date

Number: 80889-92

Analyzed: 8/5/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 105%

Comments: Unidentified peaks at 3.21 and 5.17 minutes that are 14% and 93% of the surrogate respectively.  
Recommend EPA GC/MS method 624 with library spectral search

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway Date: 8  
S. Azimi-Galloway

Laboratory Supervisor: [Signature]



**VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)**

Project: Lockheed Savannah

Lab ID: 14116

Sample  
Location: MV-8 MV-8

Date  
Collected: 8/4/88

Sample  
Number: 80859-62

Date  
Analyzed: 8/5/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 106%

Comments: Unidentified peak at 5.17 minutes that is 67% of the surrogate.

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date:

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13871

Sample

Location: MW-8

Date

Collected: 7/28/88

Sample

Number: 93909-10

Date

Analyzed: 7/29/88

	Analyte	Reporting
	Concentration	Limit
	ug/L (ppb)	ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trans-1,3-Dichloropropylene	< 0.5	0.5
Trichloroethylene	5	0.5
Cis-1,3-Dichloropropylene	< 0.5	0.5
1,1,2-Trichloroethane	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	6.5	0.5
1,1,2,2-Tetrachloroethane	< 0.5	0.5

Surrogate recovery (percent) 96%

Comments: Unidentified peaks at 3.55 and 5.68 minutes that are 15% and 78% of the surrogate respectively.  
GCMS Library Search may be used to identify.

Analyst: S. Pederson

S. Pederson

Reviewed by: Marijane A. Lopez

M.A. Lopez

Date: 7/29/88

Laboratory Supervisor: [Signature]



**VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)**

Project: Lockheed Savannah

Lab ID: 14360

Sample

Location: MW-7 MW-7

Date

Collected: 8/12/88

Sample

Number: 94267-70

Date

Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 113%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/13/88

Laboratory Supervisor: [Signature]



**VOLATILE HALOCOMATED ORGANIC COMPOUNDS**  
**EPA METHOD 601 (MODIFIED)**

Project: Lockheed, Ga.

Lab ID: 13867

Sample  
Location: MW-7

Date  
Collected: 7/28/88

Sample  
Number: 93901-02

Date  
Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trans-1,3-Dichloropropylene	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Cis-1,3-Dichloropropylene	< 0.5	0.5
1,1,2-Trichloroethane	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5
1,1,2,2-Tetrachloroethane	< 0.5	0.5

Surrogate recovery (percent) 95%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: Marjorie A. Lopez  
M.A. Lopez

Date: 7/

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14364

Sample

Date

Location: MW-6 Equipment Blank

Collected: 8/12/88

Sample

Date

Number: 94279-80

Analyzed: 8/13/88

	Analyte	Reporting
	Concentration	Limit
	ug/L (ppb)	ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 103%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/13/88

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14362

Sample

Date

Location: MW-6 Trip Blank

Collected: 8/12/88

Sample

Date

Number: 94275-76

Analyzed: 8/13/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 107%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/13/88

Laboratory Supervisor: [Signature]



**VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)**

Project: Lockheed Savannah

Lab ID: 14358

Sample

Location: MW-6 MW-6

Date

Collected: 8/12/88

Sample

Number: 94241-44

Date

Analyzed: 8/13/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 111%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/13/88

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13869

Sample

Location: MV-6

Date

Collected: 7/28/88

Sample

Number: 93905-06

Date

Analyzed: 7/29/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trans-1,3-Dichloropropylene	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Cis-1,3-Dichloropropylene	< 0.5	0.5
1,1,2-Trichloroethane	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5
1,1,2,2-Tetrachloroethane	< 0.5	0.5

Surrogate recovery (percent) 93%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: Maria A. Lopez

M.A. Lopez

Date: 7/31

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14320

Sample

Location: MW-5 Trip Blank

Date

Collected: 8/11/88

Sample

Number: 94255-56

Date

Analyzed: 8/12/88

	Analyte	Reporting
	Concentration	Limit
	ug/L (ppb)	ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 110%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: C. Azimi-Galloway

S. Azimi-Galloway

Date: 8/12/88

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14318

Sample  
Location: MW-5 Equipment Blank

Date  
Collected: 8/11/88

Sample  
Number: 94251-94252

Date  
Analyzed: 8/12/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 95%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: C. J. 700 S. Azimi-Galloway Date: 8/12/88

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14322

Sample

Location: MW-5 MW-5

Date

Collected: 8/11/88

Sample

Number: 94233-36

Date

Analyzed: 8/12/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 2	2
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 90%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: C. Azimi-Galloway

S. Azimi-Galloway

Date: 8/1

Laboratory Supervisor: J. James



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13873

Sample  
Location: MW5

Date  
Collected: 7/28/88

Sample  
Number: 93913-14

Date  
Analyzed: 7/30/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trans-1,3-Dichloropropylene	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Cis-1,3-Dichloropropylene	< 0.5	0.5
1,1,2-Trichloroethane	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5
1,1,2,2-Tetrachloroethane	< 0.5	0.5

Surrogate recovery (percent) 99%

Comments:

Analyst: Manoia A. Lopez  
M.A. Lopez

Reviewed by:

S. Azimi-Galloway

Date:

Laboratory Supervisor:

R. JAMES



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah  
Sample  
Location: MW-4 Equipment Blank  
Sample  
Number: 80876-77

Lab ID: 14110  
Date  
Collected: 8/4/88  
Date  
Analyzed: 8/6/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 99%

Comments:

Analyst: S. Pederson Reviewed by: S. Azimi-Galloway Date: 8/10/88

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed-Savannah

Lab ID: 14152

Sample

Date

Location: MW-4 Equipment Blank

Collected: 8/5/88

Sample

Date

Number: 907-08

Analyzed: 8/6/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 102%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8

Laboratory Supervisor:



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14356

Sample

Location: MW-4 MW-4

Date

Collected: 8/12/88

Sample

Number: 94225-28

Date

Analyzed: 8/13/88

Analyte	Reporting
Concentration	Limit
ug/L	ug/L
(ppb)	(ppb)
Vinyl Chloride	< 1
Trichlorofluoromethane	< 0.5
1,1-Dichloroethylene	< 0.5
1,1-Dichloroethane	< 0.5
Trans-1,2-Dichloroethylene	< 0.5
Chloroform	< 0.5
1,2-Dichloroethane	< 0.5
1,1,1-Trichloroethane	< 0.5
Carbon Tetrachloride	< 0.5
Bromodichloromethane	< 2
1,2-Dichloropropane	< 0.5
Trichloroethylene	< 0.5
Chlorodibromomethane	< 1
Bromoform	< 1
Tetrachloroethylene	< 0.5

Surrogate recovery (percent) 110%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/13/88

Laboratory Supervisor [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed-Savannah

Lab ID: 14153

Sample

Date

Location: MW-4 MW-4

Collected: 8/5/88

Sample

Date

Number: 80897-00

Analyzed: 8/6/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 102%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date:

Laboratory Supervisor:

T. J. Santos



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14108

Sample

Location: MW-4 MW-4

Date

Collected: 8/4/88

Sample

Number: 80868-71

Date

Analyzed: 8/5/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 103%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8

Laboratory Supervisor: E. J. Galloway



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13875

Sample

Location: MW-4

Date

Collected: 7/28/88

Sample

Number: 93917-18

Date

Analyzed: 7/29/88

	Analyte	Reporting
	Concentration	Limit
	ug/L (ppb)	ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trans-1,3-Dichloropropylene	< 0.5	0.5
Trichloroethylene	1	0.5
Cis-1,3-Dichloropropylene	< 0.5	0.5
1,1,2-Trichloroethane	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5
1,1,2,2-Tetrachloroethane	< 0.5	0.5

Surrogate recovery (percent) 95%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

Marissa A. Lopez  
M.A. Lopez

Date: 7/

Laboratory Supervisor:



James W. Andrews, Ph.D.  
President

Janette Davis Long  
Vice-President

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LOG NO: 88-4533

Received: 29 JUL 88

Mr. Steve Carlton  
McLaren Environmental Engineering  
11101 White Rock Road  
Rancho Cordova, CA 95670

Project: Lockheed, GA

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	SAMPLED BY
4533-1	Transformer #1 7-29-88	Client
PARAMETER	4533-1	
PCB'S		
Aroclor-1016, mg/kg	<5	
Aroclor-1221, mg/kg	<5	
Aroclor-1232, mg/kg	<5	
Aroclor-1242, mg/kg	<5	
Aroclor-1248, mg/kg	<5	
Aroclor-1254, mg/kg	<5	
Aroclor-1260, mg/kg	<5	

Methods: EPA 600/400-

J. W. Andrews  
J. W. Andrews, Ph. D.

# METAL ANALYSIS

Project: Lockheed-Savannah

Lab ID: 14313

Sample

Location: GP-1 Grit Pit Near MW-8  
12''

Date

Sampled: 8/11/88

Sample

Number: 20006

Date

Analyzed: 8/15/88

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>CONCENTRATION</u>	<u>REPORTING</u>
	ug/g	<u>LIMIT</u>
	(ppm)	ug/g
		(ppm)
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	< 0.5	0.5
Barium (Ba)/7080	80	10
Beryllium (Be)/7090	2	0.5
Cadmium (Cd)/7130	0.7	0.4
Chromium (Cr)/7190	36	0.7
Cobalt (Co)/7200	17	0.8
Copper (Cu)/7210	960	0.9
Lead (Pb)/7420	640	3
** Mercury (Hg)/7470	0.05	0.02
Molybdenum (Mo)/7480	20	10
Nickel (Ni)/7520	76	2
* Selenium (Se)/7741	0.3	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	10	5
Zinc (Zn)/7950	2100	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

F. Ramezanzadeh  
F. Ramezanzadeh

Checked:

C.R. Todd  
C.R. Todd

Date: 8/1



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova CA 95670

(916) 838-2606

# METAL ANALYSIS

Project: Lockheed-Savannah

Lab ID: 14312

Sample

Date

Location: GP-1 Grit Pit Near MW-8  
6''

Sampled: 8/11/88

Sample

Date

Number: 20005

Analyzed: 8/15/88

METAL (SYMBOL)/EPA METHOD	CONCENTRATION	REPORTING LIMIT
	ug/g (ppm)	ug/g (ppm)
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	< 0.5	0.5
Barium (Ba)/7080	90	10
Beryllium (Be)/7090	0.9	0.5
Cadmium (Cd)/7130	0.5	0.4
Chromium (Cr)/7190	21	0.7
Cobalt (Co)/7200	5	0.8
Copper (Cu)/7210	410	0.9
Lead (Pb)/7420	150	3
** Mercury (Hg)/7470	0.05	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	27	2
* Selenium (Se)/7741	0.2	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	7	5
Zinc (Zn)/7950	1600	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

P. Ramezanzadeh

Checked:

C.R. Todd

Date: 8/1



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

# METAL ANALYSIS

Project: Lockheed-Savannah

Lab ID: 14311

Sample

Location: WG-1 Waste Grit Pile  
12''

Date

Sampled: 8/11/88

Sample

Number: 20004

Date

Analyzed: 8/15/88

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>CONCENTRATION</u>	<u>REPORTING</u>
	ug/g	<u>LIMIT</u>
	(ppm)	ug/g
		(ppm)
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	< 0.5	0.5
Barium (Ba)/7080	70	10
Beryllium (Be)/7090	0.9	0.5
Cadmium (Cd)/7130	0.7	0.4
Chromium (Cr)/7190	24	0.7
Cobalt (Co)/7200	6	0.8
Copper (Cu)/7210	670	0.9
Lead (Pb)/7420	220	3
** Mercury (Hg)/7470	0.08	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	62	2
* Selenium (Se)/7741	0.2	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	5	5
Zinc (Zn)/7950	1500	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

F. Ramezanzadeh

Checked:

C.R. Todd

Date: 8/15



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

# METAL ANALYSIS

Project: Lockheed-Savannah

Lab ID: 14310

Sample

Location: WG-1 Waste Grit Pile  
6''

Date

Sampled: 8/11/88

Sample

Number: 20003

Date

Analyzed: 8/15/88

METAL (SYMBOL)/EPA METHOD	CONCENTRATION	REPORTING LIMIT
	ug/g (ppm)	ug/g (ppm)
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	< 0.5	0.5
Barium (Ba)/7080	80	10
Beryllium (Be)/7090	0.9	0.5
Cadmium (Cd)/7130	0.6	0.4
Chromium (Cr)/7190	26	0.7
Cobalt (Co)/7200	6	0.8
Copper (Cu)/7210	730	0.9
Lead (Pb)/7420	230	3
** Mercury (Hg)/7470	0.1	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	50	2
* Selenium (Se)/7741	0.2	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	7	5
Zinc (Zn)/7950	2100	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

F. Ramezanzadeh

Checked:

C.R. Todd

Date: 8/1



McLaren Analytical Laboratory

11101 White Rock Road

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(916) 638-3696

# METAL ANALYSIS

Project: Lockheed-Savannah

Lab ID: 14309

Sample

Location: CS-1 Midway Along Causeway  
12''

Date

Sampled: 8/11/88

Sample

Number: 20002

Date

Analyzed: 8/15/88

METAL (SYMBOL)/EPA METHOD	CONCENTRATION	REPORTING
		LIMIT
	ug/g	ug/g
	(ppm)	(ppm)
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	< 0.5	0.5
Barium (Ba)/7080	90	10
Beryllium (Be)/7090	2	0.5
Cadmium (Cd)/7130	0.8	0.4
Chromium (Cr)/7190	49	0.7
Cobalt (Co)/7200	19	0.8
Copper (Cu)/7210	1700	0.9
Lead (Pb)/7420	990	3
** Mercury (Hg)/7470	0.1	0.02
Molybdenum (Mo)/7480	40	10
Nickel (Ni)/7520	280	2
* Selenium (Se)/7741	0.2	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	9	5
Zinc (Zn)/7950	2200	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

F. Ramezanzadeh

Checked:

C.R. Todd

Date: 8/1



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

# METAL ANALYSIS

Project: Lockheed-Savannah

Lab ID: 14308

Sample  
Location: CS-1 Midway Along Causeway  
16''

Date  
Sampled: 8/11/88

Sample  
Number: 20001

Date  
Analyzed: 8/15/88

<u>METAL (SYMBOL)/EPA METHOD</u>	<u>CONCENTRATION</u> ug/g (ppm)	<u>REPORTING LIMIT</u> ug/g (ppm)
Antimony (Sb)/7040	6	5
* Arsenic (As)/7061	< 0.5	0.5
Barium (Ba)/7080	100	10
Beryllium (Be)/7090	5	0.5
Cadmium (Cd)/7130	0.9	0.4
Chromium (Cr)/7190	71	0.7
Cobalt (Co)/7200	28	0.8
Copper (Cu)/7210	2800	0.9
Lead (Pb)/7420	1500	3
** Mercury (Hg)/7470	0.08	0.02
Molybdenum (Mo)/7480	60	10
Nickel (Ni)/7520	440	2
* Selenium (Se)/7741	0.2	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	< 10	10
Vanadium (V)/7910	9	5
Zinc (Zn)/7950	2900	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst: J. Ramezanzadeh Checked: C.R. Todd

Date: 8/15



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208333

24-hour turnaround

PROJECT DESIGNATION

Lockheed - Savannah

SAMPLES TAKEN BY:

Gene Davis

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
CS-1	Midway along causeway 6"	8/11/88	8:35		X	20001	baggie	CAM Metals
CS-1	↓ 12"		8:45		X	20002		
WG-1	Waste pit 6"		9:20		X	20003		
WG-1	↓ 12"		9:30		X	20004		
GP-1	Gr. pit near AW-8 6"		10:00		X	20005		
GP-1	↓ 12"		10:05		X	20006		

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Gene Davis

GENE DAVIS

RECEIVED BY:

DATE: TIME

8/11/88 4:00 PM

RELINQUISHED BY:

RECEIVED BY:

DATE: TIME

RECEIVED FOR LABORATORY BY:

DATE: TIME

METHOD OF SHIPMENT:

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES NO

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208373

24 hr Push

2/4

PROJECT DESIGNATION Lockheed EA

SAMPLES TAKEN BY: Keith M. McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL				
				COMP	GRAB				
	GS 4	7/24/85			X		3562	40ml UOA	7010 (137)
							3563		7010
							3564		7020 (137)
							3565		7010
							3566	UOA	7010 (137)
	HA 15	7/27/85					3567	40ml UOA	7010 (137)
							3568		7010
							3569		7020 (137)
							3570		7010
	GS 6						3571		7010 (137)

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY: Keith M. McIntyre

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RECEIVED FOR LABORATORY BY: Michael M. McCumburg

DATE/TIME

METHOD OF SHIPMENT: Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208374

24 hr Rush

1/4

Back with Steve Carlton

PROJECT DESIGNATION Lockhead, CA

SAMPLES TAKEN BY: Keith M. Sutton

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL				
				COMP	GRAB				
	GS 5 Sediment	7/26/88			X		3551	40ml UOA	7010 13781
							3552		Spore
							3553		8020 13782
							3554	baggie	13783
							3555	411ml UOA	CFR 11-10
	GS 3						3557		8010 13784
							3558		Spore
							3559		8020 13785
							3560		Spore
							3561	baggie	13786

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY: Keith M. Sutton

RECEIVED BY: \_\_\_\_\_

DATE/TIME

7/27/88 1900

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RECEIVED FOR LABORATORY BY: Michael H. Newbury

DATE/TIME

7-27-88 12:01

METHOD OF SHIPMENT:

Exl x

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED

FREEZER ☐ ID \_\_\_\_\_

☐ ☐

CABINET ☐ ID \_\_\_\_\_

YES NO

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

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# McLaren Analytical Laboratory

## Chain of Custody Record

208359

Check with Steve Cortton  
about analyses required

24 hr Rush

3/9

Keith

PROJECT DESIGNATION Lockheed GA

SAMPLES TAKEN BY: Keith McIntyre McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED	
				WATER					SOIL
				COMP	GRAB				
	0.5-1.0 <del>2.5-3.0</del> SB 3 <del>0.5-1.0</del>	7/25/88			X	3980	40ml UOA	Spare *	
	SB 3	2.5-3.0				3984		8020 Archive	
						3985		Spare	
						3986		8020 Archive	
						3987		Spare	
	GS 1 sediment					3992	baggie	Metals (1375)	
						3993	40 ml UOA	8010 (1375)	
						3994		Spare	
						3995		8020 (1376)	
						3996		Spare	

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY: Keith McIntyre McIntyre

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

7/26/88 1800

RECEIVED FOR LABORATORY BY: Michael N. Newcomb

DATE/TIME  
7-27-88 16:00

### METHOD OF SHIPMENT:

Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED

FREEZER ☐ ID \_\_\_\_\_

☐ ☐

CABINET ☐ ID \_\_\_\_\_

YES NO

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

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# McLaren Analytical Laboratory

## Chain of Custody Record

check with Steve Carlton

4/9

208361

24 hr Push

PROJECT DESIGNATION Lockheed, Georgia

SAMPLES TAKEN BY:\*

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
	GS 1 Sediment	22 7/25/86			X	3997	40 ml vial	8010 (137)
						3998		Spore
						3999		8020 (137)
						4000	baggie	Metals (137)
	HA 7 3.0-3.2					20151	40 ml vial	8020 (137)
						20152		Spore
	HA 8 0.4-0.5'					20153		8010 Archive
	HA 8 0.4-0.5					20154		Spore
						20155		8020 (137)
						20156		Spore

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

FREEZER ☐ ID \_\_\_\_\_

SECURED ☐ YES

☐ NO

RELINQUISHED BY:\*

Keith

RECEIVED BY:\*

DATE/TIME

Michael McIntyre

\_\_\_\_\_

7/26/88 1800

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

RECEIVED FOR LABORATORY BY:\*

Michael A. Newberry

DATE/TIME

7-27-88 1:00

METHOD OF SHIPMENT:

Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# METAL ANALYSIS

Project: Lockheed, Ga.

Lab ID: 13783

Sample

Location: GS5 Sediment

Date

Sampled: 7/26/88

Sample

Number: 3554

Date

Analyzed: 7/29/88

METAL (SYMBOL)/EPA METHOD	CONCENTRATION ug/g	REPORTING LIMIT ug/g
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	1	0.5
Barium (Ba)/7080	< 10	10
Beryllium (Be)/7090	< 0.5	0.5
Cadmium (Cd)/7130	< 0.4	0.4
Chromium (Cr)/7190	19	0.7
Cobalt (Co)/7200	2	0.8
Copper (Cu)/7210	12	0.9
Lead (Pb)/7420	20	3
** Mercury (Hg)/7470	< 0.02	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	4	2
* Selenium (Se)/7741	0.1	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	20	10
Vanadium (V)/7910	20	5
Zinc (Zn)/7950	35	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst: F. Ramezanzadeh

Checked:

S. Azimi-Galloway

Date: 7/31

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 638-3696

# METAL ANALYSIS

Project: Lockheed, Ga.

Lab ID: 13789

Sample  
Location: GS4 Sediment

Date  
Sampled: 7/26/88

Sample  
Number: 3566

Date  
Analyzed: 7/29/88

METAL (SYMBOL)/EPA METHOD	CONCENTRATION	REPORTING LIMIT
	ug/g (ppm)	ug/g (ppm)
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	0.9	0.5
Barium (Ba)/7080	< 10	10
Beryllium (Be)/7090	< 0.5	0.5
Cadmium (Cd)/7130	< 0.4	0.4
Chromium (Cr)/7190	14	0.7
Cobalt (Co)/7200	2	0.8
Copper (Cu)/7210	8	0.9
Lead (Pb)/7420	10	3
** Mercury (Hg)/7470	< 0.02	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	4	2
* Selenium (Se)/7741	0.1	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	20	10
Vanadium (V)/7910	10	5
Zinc (Zn)/7950	25	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst: F. Ramezanzadeh Checked: S. Azimi-Galloway

Date: 7/3

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

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# METAL ANALYSIS

Project: Lockheed, Ga.

Lab ID: 13786

Sample  
Location: GS3

Date  
Sampled: 7/26/88

Sample  
Number: 3561

Date  
Analyzed: 7/29/88

METAL (SYMBOL)/EPA METHOD	CONCENTRATION	REPORTING
		LIMIT
	ug/g	ug/g
	(ppm)	(ppm)
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	0.9	0.5
Barium (Ba)/7080	< 10	10
Beryllium (Be)/7090	< 0.5	0.5
Cadmium (Cd)/7130	< 0.4	0.4
Chromium (Cr)/7190	14	0.7
Cobalt (Co)/7200	2	0.8
Copper (Cu)/7210	7	0.9
Lead (Pb)/7420	10	3
** Mercury (Hg)/7470	< 0.02	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	4	2
* Selenium (Se)/7741	0.1	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	20	10
Vanadium (V)/7910	10	5
Zinc (Zn)/7950	21	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst: F. Ramezanzadeh

Checked: S. Azimi-Galloway

Date: 7/30

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

# METAL ANALYSIS

Project: Lockheed, Ga.

Lab ID: 13758

Sample  
Location: GS1 Sediment

Date  
Sampled: 7/25/88

Sample  
Number: 3992

Date  
Analyzed: 7/29/88

METAL (SYMBOL)/EPA METHOD	CONCENTRATION ug/g (ppm)	REPORTING LIMIT ug/g (ppm)
Antimony (Sb)/7040	5	5
* Arsenic (As)/7061	1	0.5
Barium (Ba)/7080	< 10	10
Beryllium (Be)/7090	< 0.5	0.5
Cadmium (Cd)/7130	< 0.4	0.4
Chromium (Cr)/7190	21	0.7
Cobalt (Co)/7200	6	0.8
Copper (Cu)/7210	71	0.9
Lead (Pb)/7420	51	3
** Mercury (Hg)/7470	0.24	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	10	2
* Selenium (Se)/7741	< 0.1	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	20	10
Vanadium (V)/7910	10	5
Zinc (Zn)/7950	240	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

F. Ramezanzadeh  
for FR

Checked:

S. Azimi-Galloway  
S. Azimi-Galloway

Date:

7/3

Laboratory Supervisor:

[Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 638-3696

# METAL ANALYSIS

Project: Lockheed, Ga.

Lab ID: 13755

Sample  
Location: GS1 Sediment

Date  
Sampled: 7/22/88

Sample  
Number: 4000

Date  
Analyzed: 7/29/88

METAL (SYMBOL)/EPA METHOD	CONCENTRATION ug/g (ppm)	REPORTING LIMIT ug/g (ppm)
Antimony (Sb)/7040	< 5	5
* Arsenic (As)/7061	7.5	0.5
Barium (Ba)/7080	< 10	10
Beryllium (Be)/7090	0.5	0.5
Cadmium (Cd)/7130	< 0.4	0.4
Chromium (Cr)/7190	14	0.7
Cobalt (Co)/7200	2	0.8
Copper (Cu)/7210	10	0.9
Lead (Pb)/7420	10	3
** Mercury (Hg)/7470	< 0.02	0.02
Molybdenum (Mo)/7480	< 10	10
Nickel (Ni)/7520	5	2
* Selenium (Se)/7741	0.1	0.1
Silver (Ag)/7760	< 0.5	0.5
Thallium (Tl)/7840	20	10
Vanadium (V)/7910	20	5
Zinc (Zn)/7950	28	0.8
* Hydride generation method		
** Cold vapor method		

Comments:

Analyst:

F. Ramezanzadeh  
F. Ramezanzadeh

Checked:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/31

Laboratory Supervisor:

[Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 638-3696

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13793

Sample  
Location: GS6

Date  
Collected: 7/27/88

Sample  
Number: 3573

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.01	0.01
Toluene	< 0.01	0.01
Ethylbenzene	< 0.01	0.01
p-Xylene	< 0.01	0.01
m-Xylene	< 0.01	0.01
o-Xylene	< 0.01	0.01
Chlorobenzene	< 0.01	0.01
1,2-Dichlorobenzene	< 0.01	0.01
1,3-Dichlorobenzene	< 0.01	0.01
1,4-Dichlorobenzene	< 0.01	0.01

Surrogate recovery (percent) 82%

Comments:

Analyst: Marjorie A. Lopez  
M.A. Lopez

Reviewed by:

S. Azimi-Galloway

Date: 7/29/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 638-3696

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13782

Sample

Date

Location: GS5 Sediment

Collected: 7/26/88

Sample

Date

Number: 3553

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 90%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: Marjorie A. Lopez Date: 7/29/  
M.A. Lopez

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13788

Sample

Location: GS4 Sediment

Date

Collected: 7/26/88

Sample

Number: 3564

Date

Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent)

84%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

M.A. Lopez  
M.A. Lopez

Date: 7/29/88

Laboratory Supervisor:



McLaren Analytical Laboratory

11101 White Rock Road

Rancho Cordova, CA 95670

(916) 638-3696

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13785

Sample  
Location: GS3

Date  
Collected: 7/26/88

Sample  
Number: 3559

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 82%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: Marjorie A. Lopez  
M.A. Lopez

Date: 7/29/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

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Rancho Cordova, CA 95670

(916) 638-3696

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13760

Sample  
Location: GS1 Sediment

Date  
Collected: 7/25/88

Sample  
Number: 3995

Date  
Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 83%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

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VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 8020

Project: Lockheed, Ga.

Lab ID: 13754

Sample  
Location: GSI Sediment

Date  
Collected: 7/22/88

Sample  
Number: 3999

Date  
Analyzed: 7/27/88

	Analyte Concentration ug/g <u>(ppm)</u>	Reporting Limit ug/g <u>(ppm)</u>
Benzene	< 0.02	0.02
Toluene	< 0.02	0.02
Ethylbenzene	< 0.02	0.02
p-Xylene	< 0.02	0.02
m-Xylene	< 0.02	0.02
o-Xylene	< 0.02	0.02
Chlorobenzene	< 0.02	0.02
1,2-Dichlorobenzene	< 0.02	0.02
1,3-Dichlorobenzene	< 0.02	0.02
1,4-Dichlorobenzene	< 0.02	0.02

Surrogate recovery (percent) 88%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13781

Sample  
Location: GS5 Sediment

Date  
Collected: 7/26/88

Sample  
Number: 3551

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.03	0.03
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.03	0.03
Bromoform	< 0.03	0.03
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 96%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: Marion A. Lopez  
M.A. Lopez

Date: 7/29/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13787

Sample  
Location: GS4 Sediment

Date  
Collected: 7/27/88

Sample  
Number: 3562

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.03	0.03
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.03	0.03
Bromoform	< 0.03	0.03
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 103%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: Margaret A. Lopez  
M.A. Lopez

Date: 7/29/

Laboratory Supervisor: \_\_\_\_\_



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VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13784

Sample  
Location: GS3

Date  
Collected: 7/26/88

Sample  
Number: 3557

Date  
Analyzed: 7/28/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.04	0.04
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.04	0.04
Bromoform	< 0.04	0.04
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 101%

Comments:

Analyst: S. Pederson Reviewed by: Marylou A. Lopez Date: 7/29/88  
S. Pederson M.A. Lopez

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

**VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)**

Project: Lockheed, Ga.

Lab ID: 13759

Sample  
Location: GSI Sediment

Date  
Collected: 7/25/88

Sample  
Number: 3993

Date  
Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.03	0.03
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.03	0.03
Bromoform	< 0.03	0.03
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent)      101%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28/88

Laboratory Supervisor: [Signature]



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VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 8010 (MODIFIED)

Project: Lockheed, Ga.

Lab ID: 13753

Sample  
Location: GSI Sediment

Date  
Collected: 7/22/88

Sample  
Number: 3997

Date  
Analyzed: 7/27/88

	Analyte Concentration ug/g (ppm)	Reporting Limit ug/g (ppm)
Vinyl Chloride	< 0.04	0.04
Trichlorofluoromethane	< 0.02	0.02
1,1-Dichloroethylene	< 0.02	0.02
1,1-Dichloroethane	< 0.02	0.02
Trans-1,2-Dichloroethylene	< 0.02	0.02
Chloroform	< 0.02	0.02
1,2-Dichloroethane	< 0.02	0.02
1,1,1-Trichloroethane	< 0.02	0.02
Carbon Tetrachloride	< 0.02	0.02
Bromodichloromethane	< 0.02	0.02
1,2-Dichloropropane	< 0.02	0.02
Trans-1,3-Dichloropropylene	< 0.02	0.02
Trichloroethylene	< 0.02	0.02
Cis-1,3-Dichloropropylene	< 0.02	0.02
1,1,2-Trichloroethane	< 0.02	0.02
Chlorodibromomethane	< 0.04	0.04
Bromoform	< 0.04	0.04
Tetrachloroethylene	< 0.02	0.02
1,1,2,2-Tetrachloroethane	< 0.02	0.02

Surrogate recovery (percent) 104%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 7/28/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

11101 White Rock Road Rancho Cordova, CA 95670 (916) 638-3696

24 hr Rush

Kerr

SAMPLES TAKEN BY: Keith M. Lutenski

**FIELD DISPOSITION:**

FREEZER ☐ ID

8020  
0.07 ppm p-xylene  
— 0.04 ppm o-xylene

ND 8010 ~ 0.02 0.09

SECURED ☐ YES☐ NO

RELINQUISHED BY:

RECEIVED BY:

Keith McIntyre Keith McIntyre

RELINQUISHED BY:

RECEIVED BY:

8/1/88 0821  
~~7/29/88 1200~~

RECEIVED FOR LABORATORY BY:

**METHOD OF SHIPMENT:**

DATE/TIME  
8/1/38 08:00

**LABORATORY DISPOSITION:**

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

**FREEZER**      ☐ **ID** \_\_\_\_\_

CABINET ☐ ID \_\_\_\_\_

**SECURE**

7

**YES**

\* PRINT NAME AFTER SIGNATURE



**McLaren Environmental Engineering**

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208371

4/4

PROJECT DESIGNATION Lockheed GA

SAMPLES TAKEN BY: Keith M. McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER COMP   GRAB	SOIL			
	HA 13 0.5-1.0'	7/27/88			X	3582	40ml VOA	space
	HA 13 2.5-3.0					3583		8010 (1379)
	↓	↓			↓	3584		space
						3585		8020 (137)
					↓	3586	↓	space

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY: Keith M. McIntyre

RECEIVED BY: \_\_\_\_\_

DATE/TIME

7/27/88 190

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RECEIVED FOR LABORATORY BY: Michael A. Leuenburg

DATE/TIME

7-28-88 12.

### METHOD OF SHIPMENT:

Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECUR

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208372

Lockheed, GA

24 hr Rush

3/4

PROJECT DESIGNATION

SAMPLES TAKEN BY:

*Keith McIntyre*

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER COMP   GRAB	SOIL			
	GS 6	7/27/88			X	3572	40ml UOA	Spore
	↓					3573		8020 (137)
						3574		Spore
	HA 6 0.5-1.0					3575		8020 (137)
	↓					3576		Spore
						3577		Spore
	↓					3578		Spore
	HA 13 0.5-1.0					3579		8010 (137)
						3580		Spore
						3581		8020 (137)

FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

*Keith*

RECEIVED BY:

DATE/TIME

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

RECEIVED FOR LABORATORY BY:

DATE/TIME

METHOD OF SHIPMENT:

*Fed Ex*

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECUR

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208373

2/4

24 hr Push

PROJECT DESIGNATION Lockheed, GA

SAMPLES TAKEN BY: Keith M. McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
	GS 4 Sediment	7/24/88			X	3562	40 ml VOA	7010 (1378)
						3563		spare
						3564		8020 (1378)
						3565		spare
						3566	bagged	(CM 11010)
	HA 15	7/27/88				3567	40 ml VOA	7010 (137)
						3568		spare
						3569		7020 (1379)
						3570		spare
	GS 6					3571		8010 (137)

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY: Keith M. McIntyre

RECEIVED BY: \_\_\_\_\_ DATE/TIME 7/27/88 17:00

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_ DATE/TIME \_\_\_\_\_

RECEIVED FOR LABORATORY BY: Michael M. Flevenburg

DATE/TIME 7-27-88 12:00

### METHOD OF SHIPMENT:

Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

№ 208409

24 hr Rush

2/9

PROJECT DESIGNATION Lockhead, Georgia

SAMPLES TAKEN BY: Keith McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
	HA 14 0.5-1.0	7/25/88				3961	40 ml VOA	8020 137
						3962		Spare Archive
	HA 14 2.5-3.0					3968 3963		8010 137
						3969		Spare
						3970		8020 137
						3971		Spare
	HA SB 3.5-1.0'					3976 3972		8010 137
						3977		Spare
						3978		8020 137
						3979		Spare

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY: Keith McIntyre

RECEIVED BY: \_\_\_\_\_

DATE/TIME

Keith McIntyre

7/26/88 1500

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RECEIVED FOR LABORATORY BY: Michael A. Hoenburg

DATE/TIME

Michael A. Hoenburg

7-27-88 16:

METHOD OF SHIPMENT:

Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECUR

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

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# McLaren Analytical Laboratory

## Chain of Custody Record

№ 208276

Confirm Analyses  
with Steve Carlton

24 hr Rush

1/9

PROJECT DESIGNATION Lockheed, Georgia

SAMPLES TAKEN BY: Keith M. Sature

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER COMP   GRAB	SOIL			
	HA 12 0.5-1.0 <u>Lockheed</u>	7/25/88			X	3951	40 ml VOA	8010 <u>1374</u>
						3952		Archive
						3953		8020 <u>1374</u>
						3954		Spare
	HA 12 1.7-1.9					3955		<del>8010</del> Archive
						3956		Spare
						3957		<del>8020</del> Archive
						3958		Spare
	HA 14 0.5-1.0					3959		8010 <u>1374</u>
						3960		Spare

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

FREEZER ☐ ID \_\_\_\_\_

Samples 3556 and 20200 not on COC  
also sample 3480 not in shipping rec

SECURED ☐ YES

☐ NO

### RELINQUISHED BY:

Keith M. Sature

### RELINQUISHED BY:

### RECEIVED BY:

### RECEIVED BY:

### DATE/TIME

7/26/88 1806

### DATE/TIME

### RECEIVED FOR LABORATORY BY:

Michael N. Neuenburg

### DATE/TIME

7-27-88 16

### METHOD OF SHIPMENT:

Hand Delivered

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

## Chain of Custody Record

9/9

Check with Steve

24 hr Push

SAMPLES TAKEN BY:

[illegible]IMMEDIATE DELIVERY ☐

SECURED ☐ YES  
☐ NO

RECEIVED BY: \*

DATE-TIME  
7/26/88 1600

RECEIVED BY: \*

DATE/TIME

DATE/TIME  
7-27-88 16:

For Ex.

IMMEDIATE ANALYSIS ☐REFRIGERATOR ☐ ID \_\_\_\_\_

SECURI

17

**YES**



11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208365

8/9

Check with Steve

24 hr Rush

Keith

PROJECT DESIGNATION Lockheed, Georgia

SAMPLES TAKEN BY: Keith McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
	HA <sup>S</sup> 2.5-3.0	7/23/88				X	20187	40ml VOA	<del>8010</del> Archive
							20188		Spore
							20189		<del>8030</del> Archive
	HA <sup>S</sup> 2.5-3.0						20190		Spore
	Sample Blank						20191		Save
	HA 11 0.5-1.0'						20192		<del>8010</del> Archive
							20193		Spore
							20194		<del>8020</del> Archive
							20195		Spore
	HA 11 2.5-3.0						20196		8010 (1377)

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

Keith

RECEIVED BY:\*

DATE/TIME

Keith McIntyre

\_\_\_\_\_

7/26/88 1800

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

\_\_\_\_\_

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:\*

DATE/TIME

Michael N. Newbury

7-27-88 16:

METHOD OF SHIPMENT:

Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

check with Steve

№ 208364

7/9

24 hr Rush

PROJECT DESIGNATION Lockheed, Georgia

SAMPLES TAKEN BY: Keith McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
	HA 4 2.5-3.0'	7/23/88				X	20177	40ml vial	8020 (1376)
	↓						20178		Spore
	HA 4 2.5-3.0						20179		<del>8020</del>
							<del>20179</del>		8020 Archive
							20180		Spore
	<del>2.1-2.4</del>						<del>20181</del>		<del>8010</del> Broken
							<del>20182</del>		<del>Spore</del> Broken
	HA 3 0.5-1.0'						20183		8010 (1376)
	↓						20184		Spore
							20185		8020 (1376)
	↓						20186		Spore

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Keith

RECEIVED BY:

DATE/TIME

7/26/88 1800

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

RECEIVED FOR LABORATORY BY:

Michael N. Flennburg

DATE/TIME

7-27-88 16:00

METHOD OF SHIPMENT:

Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

YES

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed-Savannah

Lab ID: 14146

Sample

Date

Location: MW-8 Trip Blank

Collected: 8/5/88

Sample

Date

Number: 80880-83

Analyzed: 8/6/88

Analyte	Reporting
Concentration	Limit
ug/L	ug/L
(ppb)	(ppb)
Vinyl Chloride	1
Trichlorofluoromethane	0.5
1,1-Dichloroethylene	0.5
1,1-Dichloroethane	0.5
Trans-1,2-Dichloroethylene	0.5
Chloroform	0.5
1,2-Dichloroethane	0.5
1,1,1-Trichloroethane	0.5
Carbon Tetrachloride	0.5
Bromodichloromethane	0.5
1,2-Dichloropropane	0.5
Trichloroethylene	0.5
Chlorodibromomethane	1
Bromoform	1
Tetrachloroethylene	0.5

Surrogate recovery (percent) 96%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date:

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14113

Sample

Location: MW-8 Trip Blank

Date

Collected: 8/4/88

Sample

Number: 80855-56

Date

Analyzed: 8/5/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	1	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 91%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/5/88

Laboratory Supervisor: [Signature]



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed - Savannah

Lab ID: 14148

Sample

Date

Location: MW-8 Equipment Blank

Collected: 8/5/88

Sample

Date

Number: 80884-87

Analyzed: 8/6/88

	Analyte	Reporting
	Concentration	Limit
	ug/L	ug/L
	(ppb)	(ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 91%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date:

Laboratory Supervisor:



VOLATILE HALOGENATED ORGANIC COMPOUNDS  
EPA METHOD 601 (MODIFIED)

Project: Lockheed Savannah

Lab ID: 14111

Sample

Location: MW-8 Equipment Blank

Date

Collected: 8/4/88

Sample

Number: 80851-52

Date

Analyzed: 8/5/88

	Analyte	Reporting
	Concentration	Limit
	ug/L (ppb)	ug/L (ppb)
Vinyl Chloride	< 1	1
Trichlorofluoromethane	< 0.5	0.5
1,1-Dichloroethylene	< 0.5	0.5
1,1-Dichloroethane	< 0.5	0.5
Trans-1,2-Dichloroethylene	< 0.5	0.5
Chloroform	< 0.5	0.5
1,2-Dichloroethane	< 0.5	0.5
1,1,1-Trichloroethane	< 0.5	0.5
Carbon Tetrachloride	< 0.5	0.5
Bromodichloromethane	< 0.5	0.5
1,2-Dichloropropane	< 0.5	0.5
Trichloroethylene	< 0.5	0.5
Chlorodibromomethane	< 1	1
Bromoform	< 1	1
Tetrachloroethylene	< 0.5	0.5

Surrogate recovery (percent) 92%

Comments:

Analyst: S. Pederson

Reviewed by: S. Azimi-Galloway

Date: 8/5/88

Laboratory Supervisor: R. A. Galloway



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed, Ga.

Lab ID: 13882

Sample  
Location: MW-1

Date  
Collected: 7/28/88

Sample  
Number: 93931-32

Date  
Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 81%

Comments:

Analyst: Manjiv A. Lopez  
M.A. Lopez

Reviewed by: S. Azimi-Galloway Date: 8/1  
S. Azimi-Galloway

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

**VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602**

Project: Lockheed-Savannah

Lab ID: 14355

Sample

Date

Location: MV-1 MW-1

Collected: 8/12/88

Sample

Date

Number: 94205-08

Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent)      115%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed Add 19.0

Lab ID: 13878

Sample

Date

Location: MW-2

Collected: 7/28/88

Sample

Date

Number: 93923-24

Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	*	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 75%

Comments: \* Compound coelutes with m-xylene.

Analyst: Maria A. Lopez  
H.A. Lopez

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/1

Laboratory Supervisor: [Signature]



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14315

Sample

Location: MW-2 MW-2

Date

Collected: 8/11/88

Sample

Number: 94213-16

Date

Analyzed: 8/12/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 97%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: CR. ZOO and SA-G

S. Azimi-Galloway

Date: 8/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed, Ga.

Lab ID: 13880

Sample  
Location: MW-3

Date  
Collected: 7/28/88

Sample  
Number: 93927-28

Date  
Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 79%

Comments:

Analyst: Marijane A. Lopez  
M.A. Lopez

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/1

Laboratory Supervisor: [Signature]



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14317

Sample

Location: MW-3 MW-3

Date

Collected: 8/11/88

Sample

Number: 94221-24

Date

Analyzed: 8/12/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent)

89%

Comments: Unidentified peak at 2.57 minutes that is 23% of the surrogate.

Analyst: S. Pederson

S. Pederson

Reviewed by: CA 200

S. Azimi-Galloway

Date: 8/12/88

Laboratory Supervisor: [Signature]



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed, Ga.

Lab ID: 13876

Sample  
Location: MW-4

Date  
Collected: 7/28/88

Sample  
Number: 93919-20

Date  
Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 91%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: Marjorie A. Lopez Date: 7/29/88  
M.A. Lopez

Laboratory Supervisor: [Signature]



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602-

Project: Lockheed Savannah

Lab ID: 14109

Sample

Location: MW-4 MW-4

Date

Collected: 8/4/88

Sample

Number: 80872-75

Date

Analyzed: 8/5/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 97%

Comments: Multiple unidentified peaks seen on chromatograph.  
Recommend EPA GC/MS method 624 with library spectral search

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/

Laboratory Supervisor: J. Gump



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14154

Sample

Location: MW-4 MW-4

Date

Collected: 8/5/88

Sample

Number: 901-04

Date

Analyzed: 8/6/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 93%

Comments: Multiple unidentified peaks seen on chromatograph.  
Recommend EPA GC/MS method 624 with library spectral search

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14357

Sample

Location: MW-4 MW-4

Date

Collected: 8/12/88

Sample

Number: 94229-32

Date

Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 103%

Comments: Multiple unidentified peaks seen on chromatogram.

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/1

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed Savannah

Lab ID: 14115

Sample

Location: MW-4 Equipment blank

Date

Collected: 8/4/88

Sample

Number: 80878-79

Date

Analyzed: 8/5/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent)

97%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14155

Sample  
Location: MW-4 Equipment Blank

Date  
Collected: 8/5/88

Sample  
Number: 905-06

Date  
Analyzed: 8/6/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 99%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/

Laboratory Supervisor: R. James



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed, Ga.

Lab ID: 13874

Sample  
Location: MV-5

Date  
Collected: 7/28/88

Sample  
Number: 93915-16

Date  
Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 77%

Comments:

Analyst: Marinella Lopez Reviewed by: S. Azimi-Galloway Date: 8  
M.A. Lopez

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14323

Sample  
Location: MW-5 MW-5

Date  
Collected: 8/11/88

Sample  
Number: 94237-40

Date  
Analyzed: 8/12/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 89%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: CA ZOO SA-B Date: 8/12/88  
S. Azimi-Galloway

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14319

Sample

Location: MW-5 Equipment Blank

Date

Collected: 8/11/88

Sample

Number: 94253-54

Date

Analyzed: 8/12/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent)

91%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/12/88

Laboratory Supervisor:

R. Gandy



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14321

Sample  
Location: MW-5 Trip Blank

Date  
Collected: 8/11/88

Sample  
Number: 94257-58

Date  
Analyzed: 8/12/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 90%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: C. L. Zoller, S. A. G. Date: 8/1  
S. Azimi-Galloway

Laboratory Supervisor: [Signature]



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed, Ga.

Lab ID: 13870

Sample  
Location: MV-6

Date  
Collected: 7/28/88

Sample  
Number: 93907-08

Date  
Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 90%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: Maria A. Lopez  
M.A. Lopez

Date: 7/29/88

Laboratory Supervisor: R. J. Gaudin



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14359

Sample

Date

Location: MW-6 MW-6

Collected: 8/12/88

Sample

Date

Number: 94245-48

Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 99%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/13/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah  
Sample  
Location: MW-6 Equipment Blank  
Sample  
Number: 94281-82

Lab ID: 14365  
Date  
Collected: 8/12/88  
Date  
Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 88%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14363

Sample

Location: MW-6 Trip Blank

Date

Collected: 8/12/88

Sample

Number: 94277-78

Date

Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 88%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed, Ga.

Lab ID: 13868

Sample

Location: MW-7

Date

Collected: 7/28/88

Sample

Number: 93903-04

Date

Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent)

93%

Comments:

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

Marisela A. Lopez  
M.A. Lopez

Date: 7

Laboratory Supervisor:



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14361

Sample

Location: MW-7 MW-7

Date

Collected: 8/12/88

Sample

Number: 94271-74

Date

Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 95%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/13/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed, Ga.

Lab ID: 13872

Sample  
Location: MW-8

Date  
Collected: 7/28/88

Sample  
Number: 93911-12

Date  
Analyzed: 7/29/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	2	0.5
Toluene	2	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 86%

Comments: Multiple unidentified peaks on sample chromatogram.  
GCMS Library Search may be run for identification.

Analyst: S. Pederson  
S. Pederson

Reviewed by: M. A. Lopez Date: 7/31  
M.A. Lopez

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed Savannah

Lab ID: 14117

Sample  
Location: MW-8 MW-8

Date  
Collected: 8/4/88

Sample  
Number: 80863-66

Date  
Analyzed: 8/5/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	0.9	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 98%

Comments: Multiple unidentified peaks seen on chromatograph.  
Recommend EPA GC/MS method 624 with library spectral search.

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway Date: 8/8/88  
S. Azimi-Galloway

Laboratory Supervisor: [Signature]



VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14151

Sample

Date

Location: MW-8 MW-8

Collected: 8/5/88

Sample

Date

Number: 80893-96

Analyzed: 8/5/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	1	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 103%

Comments: Multiple unidentified peaks seen on chromatograph.  
Recommend EPA GC/MS method 624 with library spectral search.

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/8/

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14325

Sample

Location: MW-8 MW-8

Date

Collected: 8/11/88

Sample

Number: 94263-66

Date

Analyzed: 8/13/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	1	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 92%

Comments: Multiple unidentified peaks seen on chromatogram.

Analyst:

S. Pederson  
S. Pederson

Reviewed by:

S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/13

Laboratory Supervisor:



McLaren Analytical Laboratory

**VOLATILE AROMATIC COMPOUNDS-  
EPA METHOD 602**

Project: Lockheed Savannah

Lab ID: 14112

Sample

Location: MV-8 Equipment Blank

Date

Collected: 8/4/88

Sample

Number: 80853-54

Date

Analyzed: 8/5/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent)      101%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/8/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14149

Sample

Location: MW-8 Equipment Blank

Date

Collected: 8/5/88

Sample

Number: 80886-87

Date

Analyzed: 8/6/88

	Analyte Concentration	Reporting Limit
	ug/L (ppb)	ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 90%

Comments:

Analyst: S. Pederson

S. Pederson

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/8/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

**VOLATILE AROMATIC COMPOUNDS**  
**EPA METHOD 602**

Project: Lockheed Savannah

Lab ID: 14114

Sample

Location: NW-8 Trip Blank

Date

Collected: 8/4/88

Sample

Number: 80857-58

Date

Analyzed: 8/5/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
o-Dichlorobenzene	< 0.5	0.5
m-Dichlorobenzene	< 0.5	0.5
p-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent)      103%

Comments:

Analyst: S. Pedersen

S. Pedersen

Reviewed by: S. Azimi-Galloway

S. Azimi-Galloway

Date: 8/8/88

Laboratory Supervisor: [Signature]



McLaren Analytical Laboratory

VOLATILE AROMATIC COMPOUNDS  
EPA METHOD 602

Project: Lockheed-Savannah

Lab ID: 14147

Sample  
Location: MW-8 Trip Blank

Date  
Collected: 8/5/88

Sample  
Number: 80882-83

Date  
Analyzed: 8/6/88

	Analyte Concentration ug/L (ppb)	Reporting Limit ug/L (ppb)
Benzene	< 0.5	0.5
Toluene	< 0.5	0.5
Ethylbenzene	< 0.5	0.5
p-Xylene	< 0.5	0.5
m-Xylene	< 0.5	0.5
o-Xylene	< 0.5	0.5
Chlorobenzene	< 0.5	0.5
1,2-Dichlorobenzene	< 0.5	0.5
1,3-Dichlorobenzene	< 0.5	0.5
1,4-Dichlorobenzene	< 0.5	0.5

Surrogate recovery (percent) 92%

Comments:

Analyst: S. Pederson  
S. Pederson

Reviewed by: S. Azimi-Galloway  
S. Azimi-Galloway

Date: 8/8/88

Laboratory Supervisor: [Signature]



# McLaren Analytical Laboratory

## Chain of Custody Record

№ 208378

4/4

24 hr Rush Check with Steve

PROJECT DESIGNATION Lockheed, GA

SAMPLES TAKEN BY: Keith McIntyre <sup>Keith</sup>

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
	MW 3	7/28/88			X		93928	40ml VOA	Spore
	MW 1	7/28/88					93929		601 (15881)
	MW 1						93930		Spore
							93931		602 (15881)
							93932		Spore
	Rinse Blank						93933		Save
	Rinse Blank acid						93934		Save

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

Keith McIntyre

7/28/88 1900

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

RECEIVED FOR LABORATORY BY:\*

DATE/TIME

Michael N. Newburg

7-27-88 11:55

METHOD OF SHIPMENT:

Fed Ex

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES NO

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208377

24 hr Rush

Check with Steve

3/4

Keith

PROJECT DESIGNATION Lockhead, GA

SAMPLES TAKEN BY: Keith McIntyre M. McIntyre

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
	MW 4	7/28/88			X		93918	40 ml UOA	Spore
							93919		602 (1387)
							93920		Spore
	MW 2						93921		601 (1387)
							93922		Spore
							93923		602 (138)
							93924		Spore
	MW 3						93925		601 (138)
							93926		Spore
							93927		602 (1388)

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

Keith McIntyre

7/28/88 1900

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

RECEIVED FOR LABORATORY BY:

DATE/TIME

M. McIntyre

7-28-88 11:0

METHOD OF SHIPMENT:

Fed Ex

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

ME 208375

Check with Steve Corlton

24 hr Rush 1/4

Keith

PROJECT DESIGNATION Lockhead, GA

SAMPLES TAKEN BY: Keith McEntire

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL	Tile			
	Bldg 101 floor	7/28/88				X	3587	baggie	Asbestos bulk
	Bldg 102 floor					X	3587		Asbestos bulk
	Bldg 103 floor					X	3589		Asbestos bulk
	<del>Unit</del> MW 7				X		93901	40ml vial	601 <u>15867</u>
							93902		spare
							93903		602 <u>15867</u>
							93904		spare
	MW 6						93905		601 <u>15869</u>
							93906		spare
							93907		602 <u>15871</u>

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

Keith McEntire

\_\_\_\_\_

7/28/88 1900

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

\_\_\_\_\_

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:

DATE/TIME

Michael N. McEntire

7-28-88 11:00

METHOD OF SHIPMENT:

Fed Ex

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

208376

24 hr Rush

Check with Steve

2/4

Keith

PROJECT DESIGNATION Lockhead GA

SAMPLES TAKEN BY: Keith McIntyre M.T.S.

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL				
	MW 6	7/28/88		COMP	GRAB		93908	40ml VOA	Spore
	MW 8						93909		601 138
							93910		Spore
							93911		602 138
							93912		Spore
	MW 5						93913		601 138
							93914		Spore
							93915		602 138
							93916		Spore
	MW 4						93917		601 138

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☐

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY: Keith McIntyre

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

DATE/TIME 7/28/88 1900

RECEIVED FOR LABORATORY BY: Michael N. McEntyre

DATE/TIME

METHOD OF SHIPMENT: Fed Ex

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED

FREEZER ☐ ID \_\_\_\_\_

YES

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

NE 208320

24-hour turnaround

GENE DAVIS

PROJECT DESIGNATION Lockheed - Savannah SAMPLES TAKEN BY: Gene Davis

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER COMP   GRAB	SOIL			
MW-8	Equipment Blank	8-4-88	8:10		X	80851	40ml vial	601 (14)
			8:12			80852	↓	SPARE
			8:14			80853	40 ml. vial acidified	602 (1)
			8:16			80854	↓	SPARE
	Trip Blank		8:50			80855	40 ml. vial	601 X
			8:52			80856	↓	SPARE
			8:54			80857	40 ml. vial Acidified	602 (1)
			8:56			80858	↓	SPARE
MW-4	Equipment Blank	8/4/88	10:34		X	80859	40 ml. vial acidified	602 (1)
			10:36			80860	↓	SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

Gene Davis GENE DAVIS

RECEIVED BY:\*

\_\_\_\_\_

DATE/TIME

8/4/88 12:00

RELINQUISHED BY:\*

\_\_\_\_\_

RECEIVED BY:\*

\_\_\_\_\_

DATE/TIME

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:\*

Michael N. Neuenburg

DATE/TIME

8-5-88 10

METHOD OF SHIPMENT:

Fee X

LABORATORY DISPOSITION:

cool - 9000' elevation

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED

FREEZER ☐ ID \_\_\_\_\_

YES

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3608

# McLaren Analytical Laboratory

## Chain of Custody Record

208321

24-hour turnaround

GENE DAVIS

PROJECT DESIGNATION Lockheed - Savannah SAMPLES TAKEN BY: Gene Davis

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER COMP   GRAB	SOIL			
MW-8	MW-8	8/4/88	9:52		X	80859	40 ml vial	601 (14)
			9:54			80860		SPARE
			9:56			80861		SPARE
			9:58			80862		SPARE
			9:59			80863	40 ml vial acidified	602 (14)
			10:01			80864		SPARE
			10:03			80865		SPARE
			10:05			80866		SPARE
			10:10			80867	1 liter amber	General Minerals

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

FREEZER ☐ ID \_\_\_\_\_

SECURED ☐ YES

☐ NO

RELINQUISHED BY: GENE DAVIS

RECEIVED BY: \_\_\_\_\_

DATE/TIME  
8/4/88 2:00

RELINQUISHED BY: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_

DATE/TIME

RECEIVED FOR LABORATORY BY: Michael M. Newbury

DATE/TIME  
8-5-88 11:0

### METHOD OF SHIPMENT:

Ice X

LABORATORY DISPOSITION: Cool & cool container

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE ☐

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES N

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3608

# McLaren Analytical Laboratory

## Chain of Custody Record

№ 208322

24-hour turnaround

PROJECT DESIGNATION

Lockheed-Savannah

SAMPLES TAKEN BY:\*

Gene Davis

GEN. DAVIS

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
				COMP	GRAB			
MW-4	MW-4	8/4/88	12:35		X	80868	40 ml vial	601/141
			12:38			80869		SPARE
			12:40			80870		SPARE
			12:42			80871		SPARE
			12:44			80872	40 ml vial acidified	602/14
			12:46			80873		SPARE
			12:48			80874		SPARE
			12:50			80875		SPARE
MW-4	Equipment Blank		10:30			80876	40 ml vial	601/14
			10:32			80877		SPARE

FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

Gene Davis GENE DAVIS

RECEIVED BY:\*

\_\_\_\_\_

DATE/TIME

8/4/88 2:00

RELINQUISHED BY:\*

\_\_\_\_\_

RECEIVED BY:\*

\_\_\_\_\_

DATE/TIME

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:\*

Michael N. Newberry

DATE/TIME

8-5-88 10:00

METHOD OF SHIPMENT:

See X

LABORATORY DISPOSITION:

could go into container

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES ☐ NO ☐

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

№ 208323

24-hour turnaround

PROJECT DESIGNATION Lockheed - Savannah SAMPLES TAKEN BY: Gene Davis <sup>GEN.</sup> DAV.

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
MW-8	Trip Blank <del>MW-8</del>	8/5/88	6:06		X		80880	40 ml vial	601 (14)
			6:08				80881	↓	SPARE
			6:10				80882	40 ml vial Acidified	602 (14)
			6:12				80883	↓	SPARE
	Equipment Blank		6:24				80884	40 ml vial	601 (14)
			6:26				80885	↓	SPARE
			6:28				80886	40 ml vial Acidified	602 (14)
			6:30				80887	↓	SPARE
	MW-8		8:00				80888	1 liter Amber	General Mineva

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

Gene Davis GENE DAVIS

RECEIVED BY:\*

[Signature]

DATE/TIME

8/5/88 6:10

RELINQUISHED BY:\*

[Signature]

RECEIVED BY:\*

[Signature]

DATE/TIME

8-5-88 1:30

RECEIVED FOR LABORATORY BY:\*

Michael N. Neuenburg

DATE/TIME

8-5-88 1:30

METHOD OF SHIPMENT:

By hand from G.D.

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

№ 208324

## Chain of Custody Record

24-hour turnaround

PROJECT DESIGNATION Luckheed - Savannah SAMPLES TAKEN BY: Mene Davis <sup>GEN</sup> DAV

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
				COMP	GRAB			
MW-8	MW-8	8/5/88	8:26		X	80889	40 ml vial	601 (1415)
			8:28			80890		SPARE
			8:30			80891		SPARE
			8:32			80892		SPARE
			8:34			80893	40 ml vial Acidified	602 (141)
			8:36			80894		SPARE
			8:38			80895		SPARE
			8:40			80896		SPARE
MW-4	Equipment Blank	8/5/88	9:14			907	40 ml vial	601 (141)
			9:16			908		SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

FREEZER ☐ ID \_\_\_\_\_

SECURED ☐ YES

☐ NO

RELINQUISHED BY:\*

Mene Davis GENE DAVIS

RECEIVED BY:\*

\_\_\_\_\_

DATE/TIME

8/5/88 6:10

RELINQUISHED BY:\*

\_\_\_\_\_

RECEIVED BY:\*

\_\_\_\_\_

DATE/TIME

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:\*

Michael N. Alenbury

DATE/TIME

8-5-88 18:13

METHOD OF SHIPMENT:

As hand Linn S.D.

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

N2 208325

24-hour turnaround

PROJECT DESIGNATION

Lockheed-Savannah

SAMPLES TAKEN BY:

Gene Davis GEN DAVIS

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
				COMPI	GRAB			
MW-4	MW-4	8/5/88	9:41		X	80897	40 ml vial	601 (14)
			9:42			80898		SPARE
			9:43			80899		SPARE
			9:44			80900		SPARE
			9:45			901	40 ml vial Acidified	602 (14)
			9:46			902		SPARE
			9:47			903		SPARE
			9:48			904		SPARE
MW-4	Equipment Blank	8/5/88	9:10			905	40 ml vial Acidified	602 (14)
			9:12			906		SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Gene Davis GENE DAVIS

RECEIVED BY:

DATE/TIME

8/5/88 6:10

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

RECEIVED FOR LABORATORY BY:

Michael A. Newberry

DATE/TIME

8-5-88 1:50

METHOD OF SHIPMENT:

By hand from L.D.

### LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECUR

FREEZER ☐ ID \_\_\_\_\_

=

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

N2 208328

24-hour turnaround YES!

PROJECT DESIGNATION

Lockheed - Savannah

SAMPLES TAKEN BY:

Gene Davis GEN. DIV.

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
MW-2	MW-2	8-11-88	3:30		X		94209	40 ml vial acidified	601 (1H)
			3:32				94210		SPARE
			3:34				94211		SPARE
			3:36				94212		SPARE
			3:38				94213		602 (1H)
			3:40				94214		SPARE
			3:42				94215		SPARE
✓	✓		3:44		✓		94216	✓	SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Gene Davis GENE DAVIS

RECEIVED BY:

DATE/TIME

8-11-88 4:10p

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

RECEIVED FOR LABORATORY BY:

Michael J. Greenburg

DATE/TIME

METHOD OF SHIPMENT:

Express X

LABORATORY DISPOSITION:

200cc - acidulation

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

YES

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

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# McLaren Analytical Laboratory

## Chain of Custody Record

208329

24-hour turnaround

PROJECT DESIGNATION

Lockheed - Savannah

SAMPLES TAKEN BY:

Gene Davis

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
MW-3	MW-3	8/11/88	10:30		X		94217	40 ml vial acidified	601 TV
			10:31				94218		SPARE
			10:32				94219		SPARE
			10:33				94220		SPARE
			10:34				94221		602 TV
			10:35				94222		SPARE
			10:36				94223		SPARE
			10:37				94224		SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Gene Davis GENE DAVIS

RECEIVED BY:

\_\_\_\_\_

DATE/TIME

8/11/88 4:04

RELINQUISHED BY:

\_\_\_\_\_

RECEIVED BY:

\_\_\_\_\_

DATE/TIME

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:

Michael N. Neuenhuis

DATE/TIME

8-12-88 11:12

METHOD OF SHIPMENT:

FC X

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECUR

FREEZER ☐ ID \_\_\_\_\_

\_\_\_\_\_

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-2606

# McLaren Analytical Laboratory

## Chain of Custody Record

IN 208331

24-hour turnaround

PROJECT DESIGNATION

Lockheed-Savannah

SAMPLES TAKEN BY:

Gene Davis <sup>GEN DAVIS</sup>

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER COMP   GRAB	SOIL			
MW-5	MW-5	8-14-88	1:50		X	94233	40 ml vial acidified	601 (143)
			1:52			94234	non-acid	SPARE
			1:54			94235	non-acid	SPARE
			1:56			94236	acidified	SPARE
			1:58			94237	acidified	602 (143)
			2:00			94238	acidified	SPARE
			2:02			94239	non-acidified	SPARE
			2:04			94240	non-acidified	SPARE

FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

FREEZER ☐ ID \_\_\_\_\_

SECURED ☐ YES

☐ NO

RELINQUISHED BY:

Gene Davis <sup>GENE DAVIS</sup>

RECEIVED BY:

\_\_\_\_\_

DATE/TIME

8/1/88 4:0

RELINQUISHED BY:

\_\_\_\_\_

RECEIVED BY:

\_\_\_\_\_

DATE/TIME

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:

Michael M. Cullen

DATE/TIME

8-12-88 11:0

METHOD OF SHIPMENT:

Express

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

FREEZER ☐ ID \_\_\_\_\_

CABINET ☐ ID \_\_\_\_\_

SECURED ☐

☐

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3606

# McLaren Analytical Laboratory

№ 208334

## Chain of Custody Record

24-hour turnaround

PROJECT DESIGNATION Lockheed - Savannah SAMPLES TAKEN BY: Gene Davis GEN. DAVIS

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED	
				WATER					SOIL
				COMP	GRAB				
MW-5	Equipment Blank <del>(MW-5)</del>	8/11/88	12:00		X	94251	40 ml vial acidified	601 (1)	
			12:02			94252		SPARE	
			12:04			94253		602 (1)	
			12:06			94254		SPARE	
			12:10			94255		601 (1)	
			12:12			94256		SPARE	
			12:14			94257		602 (1)	
			12:16			94258		SPARE	

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

Gene Davis DAVIS

RECEIVED BY:\*

\_\_\_\_\_

DATE/TIME

8/11/88 4:00

RELINQUISHED BY:\*

\_\_\_\_\_

RECEIVED BY:\*

\_\_\_\_\_

DATE/TIME

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:\*

Michael H. Mcumber

DATE/TIME

8-12-88 11:00

METHOD OF SHIPMENT:

Air X

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECUR

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

№ 208335

24-hour turnaround

PROJECT DESIGNATION Cockeek - Savannah SAMPLES TAKEN BY: Gene Davis <sup>GEN</sup> <sub>DAV</sub>

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER	SOIL			
				COMP	GRAB			
MW-8	MW-8	8-11-88	2:40		X	94259	40 ml vial acidified	601 (1432)
			2:42			94260		SPARE
			2:44			94261		SPARE
			2:46			94262		SPARE
			2:48			94263		602 (143)
			2:50			94264		SPARE
			2:52			94265		SPARE
			2:54					SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

FREEZER ☐ ID \_\_\_\_\_

SECURED ☐ YES

☐ NO

RELINQUISHED BY:\*

Gene Davis <sup>GEN</sup> <sub>DAVIS</sub>

RECEIVED BY:\*

DATE/TIME  
8-11-88 4:00pm

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

RECEIVED FOR LABORATORY BY:\*

Michael A. Newberry

DATE/TIME

8-12-88 11:00

METHOD OF SHIPMENT:

Express

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES NO

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

NE 208327

24-hour turnaround

PROJECT DESIGNATION Lockheed - Savannah

SAMPLES TAKEN BY: Gene Davis GEN DAV

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
MW-1	MW-1	8/12/88	11:25		X		94201	40 mL vial Acidified	60X143
			11:27				94202		SPARE
			11:29				94203		SPARE
			11:31				94204		SPARE
			11:33				94205		602H
			11:35				94206		SPARE
			11:37				94207		SPARE
✓	✓	✓	11:39		✓		94208	✓	SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Gene Davis GENE DAVIS

RECEIVED BY:

DATE/TIME

8-12-88 4:00

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

RECEIVED FOR LABORATORY BY:

Michael A. Heenbury

DATE/TIME

8-15-88 12:00

METHOD OF SHIPMENT:

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES N

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

№ 208330

24-hour turnaround

PROJECT DESIGNATION

Lockheed-Savannah

SAMPLES TAKEN BY:

Gene Davis GEA DAV.

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
MW-4	MW-4	8-12-88	12:05 p.m.		X		94225	40 ml. vial acidified	601 (14)
			12:07				94226		SPARE
			12:09				94227		SPARE
			12:11				94228		SPARE
			12:13				94229		602 (14)
			12:15				94230		SPARE
			12:17				94231		SPARE
✓	✓	✓	12:19			✓	94232	✓	SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Gene Davis GENE DAVIS

RECEIVED BY:

DATE/TIME

8/12/88 4:00

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

RECEIVED FOR LABORATORY BY:

Michael A. Greenburg

DATE/TIME

8-13-88 12:00

METHOD OF SHIPMENT:

Fed Ex

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 632-2602

# McLaren Analytical Laboratory

## Chain of Custody Record

No 208332

24-hour turnaround

PROJECT DESIGNATION

Lockheed-Savannah

SAMPLES TAKEN BY:

Gene Davis

GEN. DAVIS

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE		SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED	
				WATER					SOIL
				COMP	GRAB				
MW-6	MW-6	8/12/88	9:05		X	94241	40 ml vial acidified	601 (193)	
			9:07			94242		SPARE	
			9:09			94243		SPARE	
			9:11			94244		SPARE	
			9:13			94245		602 (193)	
			9:15			94246		SPARE	
			9:17			94247		SPARE	
			9:19			94248		SPARE	

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Gene Davis GENE DAVIS

RECEIVED BY:

DATE/TIME

8/12/88 4:00

RELINQUISHED BY:

RECEIVED BY:

DATE/TIME

RECEIVED FOR LABORATORY BY:

Michael H. - [unclear]

DATE/TIME

8-15-88 12:00

METHOD OF SHIPMENT:

Freezer

LABORATORY DISPOSITION:

code 1 - no conclusion

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

NE 208336

## Chain of Custody Record

24-hour turnaround

PROJECT DESIGNATION Lockheed-Savannah SAMPLES TAKEN BY: Gene Davis **GENE DAVIS**

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
MW-7	MW-7	8/12/88	8:40		X		94267	40 ml vial acidified	601 (143)
			8:42				94268		SPARE
			8:44				94269		SPARE
			8:46				94270		SPARE
			8:48				94271		602 (14)
			8:50				94272		SPARE
			8:52				94273		SPARE
			8:54				94274		SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:

Gene Davis **GENE DAVIS**

RECEIVED BY:

\_\_\_\_\_

DATE/TIME

8/12/88 4:00

RELINQUISHED BY:

\_\_\_\_\_

RECEIVED BY:

\_\_\_\_\_

DATE/TIME

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:

Michael N. Newberry

DATE/TIME

8-13-88 12:00

METHOD OF SHIPMENT:

Ex

LABORATORY DISPOSITION:

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

NO

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

# McLaren Analytical Laboratory

## Chain of Custody Record

NE 208337

24-hour turnaround

PROJECT DESIGNATION Lockheed-Savannah SAMPLES TAKEN BY: Gene Davis <sup>GENE</sup> DAVIS

AREA	SAMPLE LOCATION	DATE	TIME	SAMPLE TYPE			SAMPLE NO.	TYPE CONTAINER(S)	ANALYSIS REQUIRED
				WATER		SOIL			
				COMP	GRAB				
MW-6	Trip Blank	8/12/88	6:48		X		94275	40 ml vial acidified	601 (14)
			6:50				94276		SPARE
			6:52				94277		602 (15)
			6:54				94278		SPARE
	Equipment Blank		6:56				94279		601 (14)
			6:58				94280		SPARE
			7:00				94281		602 (14)
			7:02				94282		SPARE

### FIELD DISPOSITION:

IMMEDIATE DELIVERY ☒

STORAGE ☐ REFRIGERATOR ☐ ID \_\_\_\_\_

SECURED ☐ YES

FREEZER ☐ ID \_\_\_\_\_

☐ NO

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

Gene Davis GENE DAVIS

\_\_\_\_\_

8/12/88 4:00

RELINQUISHED BY:\*

RECEIVED BY:\*

DATE/TIME

\_\_\_\_\_

\_\_\_\_\_

RECEIVED FOR LABORATORY BY:\*

DATE/TIME

Michael N. Neuenburg

8-13-88 12:

METHOD OF SHIPMENT:

Fed X

LABORATORY DISPOSITION:

good condition & cold

IMMEDIATE ANALYSIS ☐

STORAGE ☐

REFRIGERATOR ☐ ID \_\_\_\_\_

SECURE

FREEZER ☐ ID \_\_\_\_\_

☐

CABINET ☐ ID \_\_\_\_\_

YES

\* PRINT NAME AFTER SIGNATURE



McLaren Environmental Engineering

11101 White Rock Road, Rancho Cordova, CA 95670 (916) 638-3696

"Rite In the Rain" - A unique All-Weather Writing Paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather.

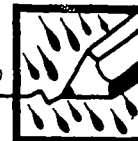
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ALL-WEATHER

**LEVEL**

Notebook No. 311

F4-1610

F4-8809-07

Latex Construction

Thunderbolt, Chatham County, GA

Geoffrey Carter

SSI, Phase II

Reference 15

63

**LOGBOOK REQUIREMENTS**  
REVISED - NOVEMBER 29, 1988

NOTE: ALL LANGUAGE SHOULD BE FACTUAL AND OBJECTIVE

1. Record on front cover of the Logbook: TDD No., Site Name, Site Location, Project Manager.
2. All entries are made using ink. Draw a single line through errors. Initial and date corrections.
3. Statement of Work Plan, Study Plan, and Safety Plan discussion and distribution to field team with team members' signatures.
4. Record weather conditions and general site information.
5. Sign and date each page. Project Manager is to review and sign off on each logbook daily.
6. Document all calibration and pre-operational checks of equipment. Provide serial numbers of equipment used onsite.
7. Provide reference to Sampling Field Sheets for detailed sampling information.
8. Describe sampling locations in detail and document all changes from project planning documents.
9. Provide a site sketch with sample locations and photo locations.
10. Maintain photo log by completing the stamped information at the end of the logbook.
11. If no site representative is on hand to accept the receipt for samples, an entry to that effect must be placed in the logbook.
12. Record I.D. numbers of COC and receipt for sample forms used. Also record numbers of destroyed documents.
13. Complete SMO information in the space provided.

The undersigned have read and understood the Phase II work plan, Study Plan, and Safety plan for the Latex Construction facility.

Geoffrey Carton Geoff Carton 9/11/89  
David Mattison David Mattison 9-11-89  
Gordon Buchanan Gordon Buchanan 7-11-89  
Jerald Tittle Jerald Tittle 9-11-89  
Loren Franklin Loren Franklin 9/11/89



1927 LAKESIDE PARKWAY  
SUITE 614  
TUCKER, GEORGIA 30084  
(404) 938-7710

GEOFFREY CARTON  
BIOLOGIST

000001

000007

7/8/89

0900 Arrive at warehouse for load out. Ron Young & David Matfield do the load out. All equipment requested is available and in good condition. Gordon ~~observed~~ observed part of load out. He approved transport of boat motor in van if cell gas is drained and gas can is kept in back of pickup. Motor was wrapped in plastic. No samples or containers will be placed in van or pickup. VOA containers will not be left in truck over weekend.

Exit meeting was held on 9/7/89

Property location

9/11/89

000000

8100 Arrive at shipyard. Gary Raver from Trinity Ind., Dallas has not yet arrived. Checked in with Guard Shack. We must display ID at all times. Rudy Cherry III, of Westinghouse environmental (912) 233-3443 represents W.E. Honey property <sup>owner</sup> wants 8 splits ~~for~~ From specific locations. Told him we have decided to drop all water samples.

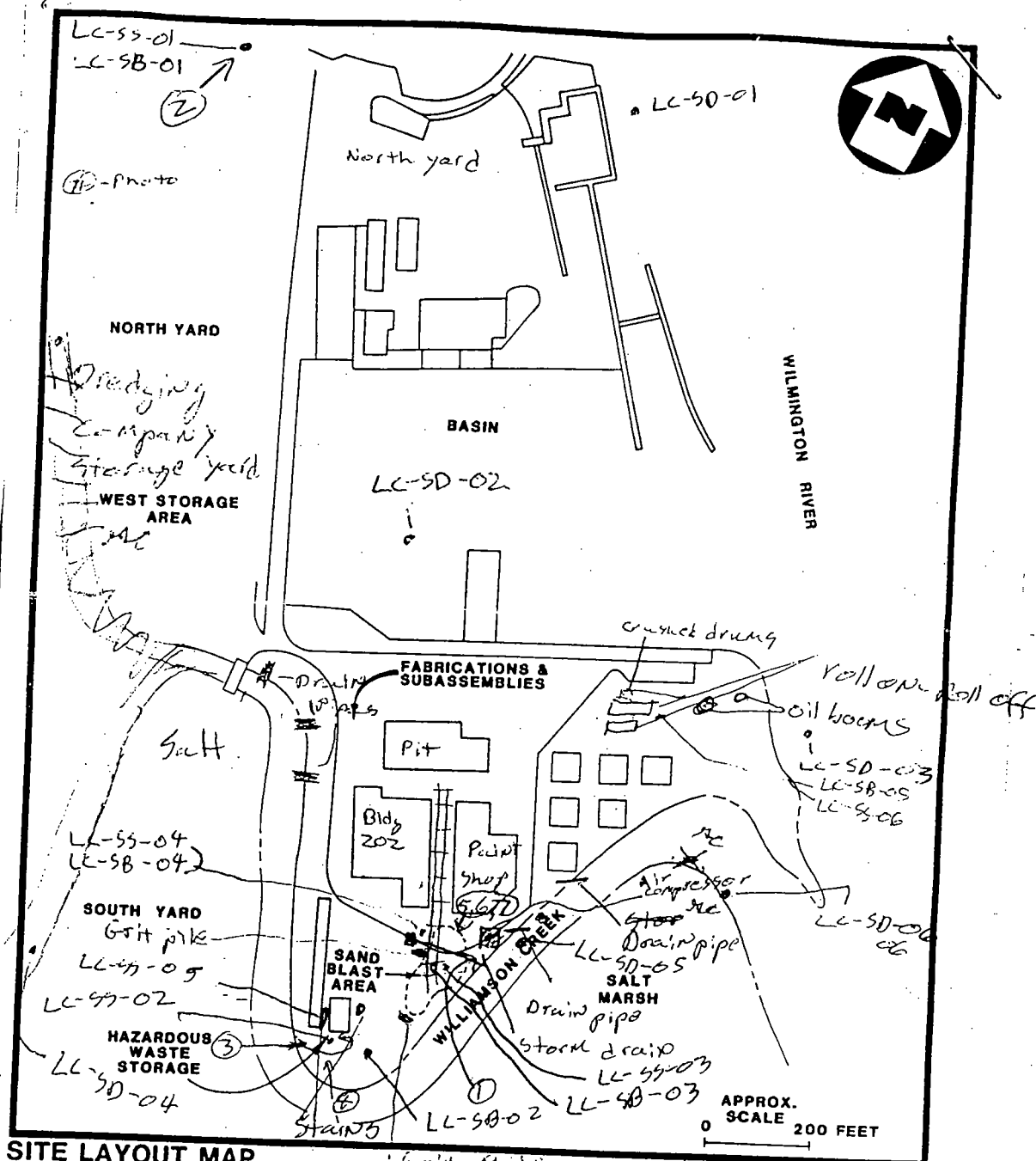
8120 Gary Raver arrived

8130 David Matfield starts to calibrate OVA & HNA

Heaf Carter

000003

000000



**SITE LAYOUT MAP  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA**

**FIGURE 1**

50000

100

000006

9/11/89

✓ CWA Tag# 165528  
HNU Tag# 683203

0835 Leon white plant safety officer came by to discuss hazards at the plant. Hard hat + safety glasses are required in the yard offered MSDS for site. There is an EMT on the property. There are overhead loads and welding. Use black beauty for sand blasting. No smoking. signs are posted.

Heat painting done in south yard. Some blasting (small amount) in north yard

Gina

Hemping Carter

9/11/89

000000

No photostatic inside of shops.

Building parts for larger crafts.

0850 HNU Calibrate  
span 9.8  
scale 0-200  
zero background  
tested w/marker

0855 start. walk around south yard

Clear ~ 70°F

Private ~~to~~ <sup>the</sup> ~~last~~  
in building being painted

Alligator in marsh  
near bldg 202

Hemping Carter

000007

000008

9/11/89

Solvent odor near bldg 202.  
No readings on  
OVA or HNU

Soil near sandblast  
area is dark in color  
from sandblast grit  
which is black

Hyland chemical transports  
all haz. waste from site

used diesel + motor oil  
recycled locally

sand blast area used  
12-14 years at least

drums are on pallets

stain on ground in front  
of haz materials storage  
area ~ 18' x 8'

No reading on HNU or OVA

*Neef Carter*

9/11/89

000009

pear Leon stated that  
is black beauty used to  
fill holes. has a petroleum  
odor.

stains (scattered) on  
south side of haz  
storage area also from  
drain leaving dike around  
waste oil container

large stain on west  
side of waste oil area  
(under same cover as haz waste)

Metal shed in south most  
part of yard has assorted  
5 gallon buckets tossed  
in shed 55 gallon  
drum of MEK (labeled)  
on side appears to be  
empty

*Neef Carter*

000009

000010

9/11/89

Rudy reported that there was a pit 8' in depth between trucks in sand blast area bldg of ships was drained into

0935 observed workers transferring solvents down on pavement ~20' upslope from <sup>storm</sup> drain next a diked area some spillage noted south side of paint shop

in side of sheds and shops drain through a system to marsh

Leon reported sand blast area is 2-3 feet of sand blast sand between rails.

The majority of boats ~~paint~~ the unblasted have been painted before.

Heaffey Carter

9/11/89

000000

use of Tin in anti-fouling was outlawed prior to Trinity taking over property.

Dark stain near unit south side of paint shop no reading on HNu or OVA

2 stains on east side of paint shop

Trinity has not done any sand blasting in area (except one boat) near basin some painting is done here

North end of south yard appears to have been cleaned

Heaffey Carter 000011

000012

7/11/89

recently but Leon reports  
not done recently  
Crushed drums in roll off  
containers in this area  
Oil booms that may have  
been used are lying on  
ground

030 arrive back at trucks

035 set up boot wash & hand  
wash

1100 select Background location  
is in parking lot in west  
storage area also part of Hwy  
property  
additional notes from conversation  
while walking yard

Yard is mainly for  
cutting & welding using  
a plasma cutter. almost all paved.

Marjorie Carter

7/11/89

000011

Rudy reported that floor  
drains in the buildings  
discharge to the marsh

used sandblast sand  
is reportedly removed  
from property and  
put in local landfill  
perhaps Dean Forest road

The yard has apparently  
been cleaned recently.

Rudy reported that none  
of the drums currently  
in the Marc waste storage  
area were there last week  
they were all sitting on  
the ground outside the  
diked area. He also reported  
that alot of the "junk" in  
the area has since been  
removed.

Marjorie Carter

000013

000014

9/11/89

Because of the lack of targets associated with the surficial aquifer the ground water samples will not be taken. Subsurface soil samples will be taken at the saturated zone.

There seem to be a number of RCRA problems on site.

Splits were requested by both consultants.

1245 arrive at background location sample SS the LC-SS-01 taken on adjacent property also owned by Mr. Honey split given to Trinity dark soil taken between 6" and 2'.

Heaffrey Carter

9/11/89

000015

1255 Take LC-SB-01 from same hole as LC-SS-01. Taken from ~ 5' b/s soil is black and saturated. Splits taken for both Trinity and Westinghouse.

These samples were taken at the north end of parking lot.

"white" sand was encountered soil was ocreous.

Case # 12698

Proj # 89-537

See Field sheets for sample tag info

Note LC-SB-01 is

Matrix duplicate

Heaffrey Carter

000015

000016

9/11/89

1400 Observed large stain  
~30' x 20' on west side  
of Haz waste storage area

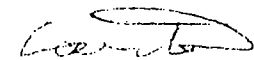
7" Brown  
to 1.5' Gray-sandy  
encountered rocks

1410 LC-SS-CZ taken from  
3' south of Haz waste  
storage area 4' from  
SW corner of area  
taken below drain in dike

1" light colored surface soil  
1/2" red sand  
Gray sand below

split taken by Trinity

reading of 3.5 on HNu  
below surface in this  
area

Heaf 

9/11/89

1430 hole ~ 50' South of Haz Mat  
~4' light colored sand  
~20.5' gray sand  
black sand  
debris

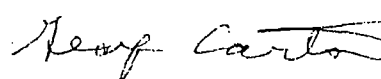
abandoned hole

435 attempt another hole  
~60' Southeast of  
Hazardous Materials  
Storage area

4' light gray w/shells  
2' gray saturated clay  
sandy below (gray) debris

1445 Take LC-SS-CZ  
between 4 + 6 feet  
VOA taken 1st  
No reading on HNu

1545 arrive at sand blast area  
2-3 feet of loose sand  
blast grit has been  
removed

Heaf  000017

000018

9/11/89

9/11/89

R100001

2' west of sand blast  
rails

6" R/c

2" sandblast sand

2" clay

2 tan sand

sandblast sand

1955 LC-SS-03 taken  
~ 1.5 foot

Reflected to fill  
all 3 802 bottles  
resampled all 3  
802 bottles

1605 resample from  
same LC-SS-03  
hole did not  
resample VOA

1615 sample LC-SS-03  
taken between 7 + 9 feet  
taken in saturated  
area. This is  
7-9 feet below excavation

Jeffrey Carter

dome for us w/front end  
loader is between  
10 + 12 feet below land  
surface fill found  
to about 10 feet bls

Splits given to both  
consultants

Metals + extractables  
+ SAS taken at  
1635

black beauty covers  
an area covered by ~~the~~  
90' x 150' about 1' or more throughout  
2 piles of waste  
black beauty  
one is 12' in diameter  
and 5' high  
2nd pile is 30' long  
by 9' wide by 4' high

Jeff Carter

000019

000020

9/11/89

1715 LC-SS-04 take  
 sample near large  
 sand blast pit  
 8" Bls  
 reading of 10 ppm  
 in hole

sample taken ~100  
 feet south of building  
 202 on west side of  
 sandblast area 40 feet  
 west of sandblast  
 tracks

~4" black beauty  
 ~2" red sand  
 ~8" gray sand  
 water encountered  
 at ~4' bls

Neaf Carter

9/11/89

000021

1735 LC-SS-04 taken  
 about 6'  
 saturated dark  
 gray color  
 same location as  
 LC-SS-04 split for  
 trinity only  
 we retained custody  
 of all samples at  
 end of day.

Note: during day workers  
 were cleaning debris  
 from the south end of  
 the south yard. Some  
 of the debris was boxes  
 of forms left by Lockheed

All VOA's + Trinity samples  
 taken directly from Auger  
 bucket

Neaf Carter

000021

000022

9/12/89

0755 arrive on site

0800 Rudy arrives on site  
Gave him a copy of  
the safety plan

0819 Gary arrives on site

0819 David calibrates HNU  
5.8 (58 ppm)  
9.8 span  
0200 scale0830 we are ready to sample  
but can't find Gary Raven  
of trinity. He was looking  
for us.0845 sample LC-45-05 taken  
approx 1/2" b/w take  
2 VOA's for MUG  
will attempt to  
USE. FASD for ONE

Jeffrey Carter

9/12/89

000023

SAS sample not taken  
taken ~ 12' west of  
Haz Waste Storage areastain is measured 31'  
by 17'split taken for  
trinityStain previously ~~mentioned~~  
mentioned (9/11) measures  
30 x 10 on east side  
hazardous waste storageall fell off, observed  
rest <sup>at</sup> directly on  
earthtwo open top square  
tanks ~ 5' x 30' in  
a diked area behind  
bldg 202 labeled Hot water  
are empty. <sup>small</sup> crack in dike.

Jeffrey Carter 000023

000024

7/12/89

If ask Gary what the tanks are used for he will check.

0935 The tanks were <sup>to be</sup> used for pickling by Lockheed but were never put in service

start hand augering

~ 6" black beauty

~ 4" tan sand

4" gray sand

~ 1' mottled gray-blue gray

1' wet sand

~ 4" fine

1/2' debris

abandon hole

Heffering cart

7/12/89

000025

H2O reads 4 ppm  
in the hole no reading  
in breathing zone

attempt new hole  
~ 3' from 1st

hole location

new hole water  
encountered at  
4' bls ~~dark~~ gray  
Mud saturated

0950 LL-SS-06 taken  
~ 4" bls dark sandy

Location is ~ 150 feet  
south of basin  
120' east of end of side yard

Heffering cart

000025

000026

9/12/89

9/12/89

000000

tracks

1005 LC-SB-OS taken ~3'  
from LC-SS-CG at  
depth of 4 1/2 to 5' b/s  
one split for Trinity

1040 Discussed sample locations  
for sediment samples  
with Gary Raven. He  
requested we sample  
under the Hwy 80  
~~bridge~~ bridge. I told  
him my concerns about  
contamination from  
maintenance there. He  
responded that this was  
his concern also and  
wanted to disassociate  
that contamination from  
on site contamination.  
Sample will be taken between  
shipyard and Hwy.

we will put in the  
boat on other side  
of river at a public  
ramp. Ron and David  
will take samples.

1210 leave to put boat in

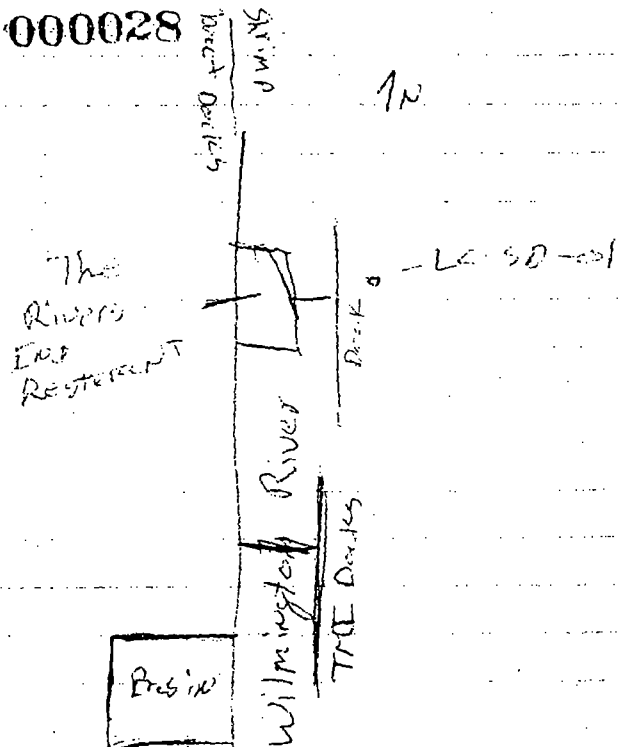
1215 Arrive at TMI dock  
to observe sampling.  
Observed from shore.

Jeffrey Carter

Jeffrey Carter 000027

000028

9/12/89



Not to Scale

K-1

Shelley Carter 9/12/89

1300 LC-SD-01 Taken  
w/pump dredge  
50' east of Rivers  
end Dock 100' South  
of Shrimp Boat  
dock ~~into~~ Taken  
Near low tide ~ 20'  
deep about 100-150'  
from shore at this  
time. Split w/Trinity only

1330 Attempting to take  
LC-SD-02 from center  
of ship basin with  
hand auger

1335 LC-SD-02 is taken  
~ 200 feet North of  
South basin wall and  
200' ~~west~~ east of  
west basin wall  
taken in ~ 16' of water  
still near low tide

Shelley Carter

000029

000030

9/12/89

in order to get a large enough volume of sediments for splits with both consultants auger bucket was filled three times. Sample for toxicity was taken directly from auger bucket all VOA's taken from 1st auger bucket.

1415 arrive in area to take LC-SD-03 will be taken 150' south of ship basin in Wilmington River. Lost anchor in this location. Trouble with scoop ~~to be~~ returned for new scoop.

1420 Observed someone using a cast net directly across river from ~~ship basin~~ ~~land~~

9/12/89

000000

basin. also observed shrimp boats returning.

1425 unable to get sample using scoop. will use power dredge. ~~3 attempts~~ 3 attempts no sediment gotten.

1440 LC-SD-03 is taken ~ 75' south of basin 100' east of shore taken in about 8' of water

Black beauty appears to be used as fill on property seen near Synerolift

Spec for tox

000031

000032

9/12/89

1510 LC-SD-04 taken  
in Williamson Creek  
up gradient near  
tree line at island  
tide is coming in  
taken in ~1' of water

1545 next to sand blast  
area black beauty  
is observed in reeds  
in salt marsh

1550 sample LC-SD-05  
taken in ~4 1/2 foot  
of water in Williamson  
Creek. Black beauty  
sand is on top of  
sediments. Sample taken  
about 10 feet from shore  
about 10 feet south  
of air compressor  
for sand blast area

*Greg Cantu*

9/12/89

000000

1610 sample LC-SD-06 taken  
~~at~~ 100 feet from  
Mouth of Williamson  
Creek at bend on  
east bank taken in  
about 6 feet of water

Observed 2 paper drums  
in poor condition. No  
labels. Pinkish material  
a little bit of blood  
red liquid also

Note: Clear and Hot  
~85°F all day

*Greg Cantu*

000033

000034

4/4/90

000000

Additional ~~rec~~ notes:

There is a fence restricting from land.  
However access to the facility from  
the water was unrestricted.

See photo #'s 11, 18, 21 + 24

In the south end of the  
south yard was a metal shed  
filled w/ junk including  
bars of paint, etc. Outside  
the shed was more junk  
including an empty MEK drum  
and visible in background of  
photo 9

There was a discarded oil  
boom on the ground in the  
overflow sand blast area

Sand blasting is done in open  
See photos 6, 7, 11 + 21

Thin coating of sand blast  
grit was observed in overflow sand blast  
area.  
Haffrey Center

000035

CONTROL NO.

DATE: December 14, 1988

TIME: 1030

DISTRIBUTION: File  
Latex Construction  
Thunderbolt, Chatham County, Georgia

BETWEEN: Leon White, Safety &  
Security Dave Moore, Former Head

OF: Thunderbolt Shipbuilding

PHONE: (912) 351-3464

AND: Geoffrey Carton, NUS Corporation

## DISCUSSION:

I was told by Mr. White that Lockheed Shipbuilding was sold to Thunderbolt Shipbuilding a division of Trinity Marina. Most painting is done in dry dock. Touch up work may be done in the water but if so, Oil booms are put in place to contain spills. Absorbent materials are kept on hand in case of spills. Abrasive blasting is done with "Black Beauty", a volcanic ash, up on the hill away from the water. Most of the blasting is done to remove fire scale and rust from new ships.

Dave Moore was with Latex Construction until 1986 when the company was sold to Lockheed. He worked for Lockheed for one year. He is not employed by the facility. The company is located in a natural inlet on the river. The inlet was used a place for yachts to tie-up starting about 1930. In about 1970 repair work was gradually started at the facility. The facility later became a working shipyard. Whenever dredging has been done, samples were taken. An environmental impact statement was written for this facility. Information on sampling and the EIS is available from Wane Varner of Thunderbolt Marine Inc. in Thunderbolt. *GC*



**THUNDERBOLT**

*Marine Inc.*

SUBSIDIARY OF  
LATEX CONSTRUCTION COMPANY

JUST OUTSIDE OF SAVANNAH ON INTRACOASTAL WATERWAY

P. O. BOX 5628

SAVANNAH, GEORGIA 31414

(912) 352-4931

REPAIRS & CONSTRUCTION

TELEX 54-6439

TBOLT MAR SAV

(912) 352-4956

FULL-SERVICE MARINA

August 21, 1989

Mario E. Villamarzo, Jr.  
Environmental Engineer  
Site Assessment Section, WD  
U. S. Environmental Protection Agency  
Region IV  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

RE: Latex Construction  
3126 River Road  
Thunderbolt, Georgia

Dear Sir:

In reference to your letter of August 17th, and your prior original telephone call in reference to inspecting the properties of Thunderbolt Marine, Inc., in Thunderbolt, Georgia, I wish to inform you that the greater portion of our property including the ship yard is leased to Halter Marine, Inc., a subsidiary of Trinity Industries, Inc., and any permission for access to their leased property must be obtained direct from Trinity at the address shown below.

Your letter of August 27th states that the EPA has reason to believe that there may be a release or threat of a release of hazardous substances from the site. Frankly, this is contrary to your only call to me when you stated that this was a routine inspection of over eleven hundred locations which you had listed for inspection. I specifically asked if there had been any complaints received by your office or whether there was any evidence of any hazardous material on the site. You replied by stating that there was none and that your request for access was for a routine inspection that was being scheduled at over 1,100 locations.

*3/22 Latex Construction  
3/26 Trinity*

Page No. 2  
August 21, 1989  
Mario E. Villamarzo, Jr.  
U. S. Environmental Protection Agency

---

While I wish to cooperate with your agency, I must advise you that the lessee's permission must be obtained in order to receive permission for access to their leased premises. Accordingly, we request that your inspection be deferred pending their approval.

Sincerely,

THUNDERBOLT MARINE, INC.

By: 

W. E. Honey

cc: John Dane, III  
President  
Trinity Marine Group - Trinity Industries, Inc.  
P. O. Box 3029  
14055 Industrial Beaway Road  
Gulfport, MS 39501

cc: Halter Marine, Inc.  
P. O. Box 568887  
Dallas, TX 75356-8887

WEH/cw



THUNDERBOLT

Marine Inc.

**Georgia Department of Natural Resources**

205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334

J. Leonard Ledbetter, Commissioner

Harold F. Reheis, Assistant Director

Environmental Protection Division

**TRIP REPORT**  
**May 14, 1990**

**SITE NAME AND LOCATION:** Lockheed Shipbuilding  
Thunderbolt Shipbuilding  
3126 River Drive  
Thunderbolt, Georgia 31404

**EPA ID NUMBER:** GAD981223688

**COUNTY:** Chatham

**TRIP BY:** Freddie L. Dunn, Jr. *FD*  
Environmental Specialist  
Hazardous Waste Generator Unit

**ACCOMPANIED BY:** Howard L. Barefoot *HLB*  
Unit Coordinator  
Hazardous Waste Generator Unit

**DATE AND TIME OF INVESTIGATION:** April 2, 1990

**OFFICIALS CONTACTED:** Bill Ward, Yard Supervisor  
Erastus Gibson, Accountant  
Danny Croven, Emergency Med Tech  
Derwood Motes, Purchasing

**REFERENCE:** Citizen's Complaint Log #8129

**COMMENTS:**

The facility was inspected to investigate complaint #8129, wherein, it was indicated that Lockheed Shipbuilding/Thunderbolt Shipbuilding was improperly managing the sandblast grit at their facility. The complaint indicated that the grit is probably characteristically hazardous. It was also alleged that ship bilges were pumped out onto the sandblast grit area; and the drains from the paint shop ~~ix~~ regularly discharged into the marsh. The complainant noted numerous stains on the ground, possibly originating from solvents and oils used at the facility.

Lockheed Shipbuilding is no longer operating at this site. Trinity Marine Group currently leases this property from Mr. W. E. Honey, the owner of the property, and subleases to the Thunderbolt Shipbuilding facility at this site.

The facility is in the process of terminating its operations at this location. At the time of this inspection, there were less than ten employees at this site. The company has narrowed down its operations to that of post operational site cleanup and maintenance.

## I. Facility Manufacturing Processes

This facility reconditions and manufactures marine vessels. There are three processes involved with the operations of this facility:

1. The Dry Docking and Launching processes - this is the area where marine vessels are brought on-shore for repairs. This same area is used to return the reconditioned and/or manufactured marine vessels to the water.
2. Transfer process - this process involves the movement of marine vessels from one location to another, once they are on shore.
3. Repair and Shipbuilding processes - this process involves the initial cleaning, sandblasting, painting, engine repair, and total ship reconditioning. Hazardous waste is generated in this area of the facility from the various types of operations.

## II. Waste Generated

The kinds of waste generated at this facility are as follows; as recorded from the company's manifests.

1. Waste Alkaline Corrosive Liquid - D002-D007
2. Hazardous Waste Solid - D007
3. Flammable Liquid Waste - F003, F005
4. Waste Flammable Liquid - F003
5. Paint Waste - D001
6. Sandblast Grit

In September 1989, NUS Corporation took sediment, soil and sandblast grit samples at the site. Groundwater samples were also taken at the time of this sampling inspection. The analytical results of this sampling inspection are enclosed with this trip report.

In February 1990, Thunderbolt Shipbuilding Co. resampled the sandblast grit and had it analyzed by Savannah Laboratory and Environmental Services. The analytical results of the material sampled is enclosed with this trip report.

### III. Plant Inspection

During the plant inspection, observation was made of the following:

1. Six 55 gallon drums containing waste paint material. These drums were not labeled with waste identification or accumulation dates. The facility officials indicated that the drums may have been there for 4 months.
2. Ten unlabelled 55 gallon drums containing contaminated rags.
3. Twenty-eight 5 gallon cans and twelve 1 gallon cans of various kinds of waste material from around the facility.
4. A 10-12 feet in diameter sandblast grit pile near the paint shop.

Observations #1 and #2 were observed in the hazardous waste storage area. Observation #3 was observed in an open area near the painting facility.

### CONCLUSIONS:

1. Did not observe any indication of waste a discharge from this site to the surrounding marshes, as stated in the complaint.
2. Did not observe any indication of waste discharge from ship bilges on this site.
3. The facility is operating in violation of Chapter 391-3-11-.08 as noted below:

Part 262.34 "Accumulation Time", because the facility had not marked the beginning accumulation dates on drums in the waste accumulation area as required by paragraph (a)(2) of this Section.

Part 262.34 "Accumulation Time", because the facility had not marked the words "Hazardous Waste" on drums at the waste accumulation area as required by paragraph (1)(3) of this Section.

Trip Report  
May 14, 1990  
Page Four

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Part 262.34 "Accumulation Time", because the facility has stored hazardous waste on-site for more than 90 days without an extension, a storage facility permit, or interim status.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:  
Send the facility a Notice of Violation.

PHOTOGRAPHS: None

NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: None

REVIEWED BY:

*AB*

DATE:

*5/30/90*

ATTACHMENT:

1. Waste profile from Savannah Laboratories.
2. Waste profile and site sampling results from NUS Corp.

FLD:cm:wp1

File: Chatham County

**PROJECT NOTE**

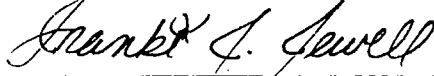
Date: August 20, 2001

Project Number: 4T-01-10-A-006

Name: Franki J. Jewell

Title: Environmental Scientist

Signature:



Subject: RCRIS Query

**PROJECT NOTE SUMMARY**

I accessed the [www.epa.gov](http://www.epa.gov) website to determine the RCRA status of the facilities that have operated on the former Latex Construction Company property (EPA ID No. GAD980803696), which is presently owned by Thunderbolt Marine Inc. (TMI). Latex Construction Company purchased the property in 1965. Thunderbolt Marine Inc., a subsidiary of Latex Construction Company acquired the facility property in 1972. Lockheed Shipbuilding, Savannah Division subsequently leased the property from TMI in 1986. In 1988, Lockheed Shipbuilding sold its U.S. Army contract to Halter Marine, Inc., a division of Trinity Industries. Trinity Industries subsequently leased the property from TMI and assigned its lease to Halter Marine Group, who operated the facility from 1988 to 1991. Palmer Johnson Savannah, Inc., then leased the facility from TMI in 1992 and presently operates a luxury yacht repair and refurbishing facility. Apparently, Latex Construction Company, Thunderbolt Marine, Inc., and Trinity Industries (Halter Marine Group) were not regulated under RCRA. Lockheed Shipbuilding was a Handler under EPA ID No. GAD981223688 and had a RCRA Part A permit. Palmer Johnson Savannah, Inc. is also a Handler, under a separate EPA ID No, GAD984313742. Attached are the results of the RCRIS query.

**RESPONSE REQUIRED**

( ) None ( ) Phone call ( ) Memo ( ) Letter ( ) Report (✓) Attachments

cc: File (✓) Project Manager ( ) Principal Investigator ( ) Other (specify) ( )



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities.

EPA FACILITY ID: Equal To: **GAD980803696**

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: Latex Construction Company

LOCATION ADDRESS: 3126 River Road

CITY NAME: Thunderbolt

COUNTY NAME: Chatham

STATE ABBREVIATION: GA

EPA REGION CODE: 4

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Latex Construction Company**

STATE ABBREVIATION: GA

EPA REGION CODE: 4

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Thunderbolt Marine Inc.**

ZIP CODE: **31404**

LOCATION ADDRESS: **3124 River Drive**

CITY NAME: **Thunderbolt**

STATE ABBREVIATION: **GA**

EPA REGION CODE: **4**

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Thunderbolt Marine Inc.**

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: Lockheed Shipbuilding Company

ZIP CODE: 31404

LOCATION ADDRESS: 3124 River Drive

CITY NAME: Thunderbolt

COUNTY NAME: Chatham

STATE ABBREVIATION: GA

EPA REGION CODE: 4

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Lockheed Shipbuilding Company, Savannah Division**

EPA REGION CODE: 4

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Lockheed Shipbuilding**

Results are based on data extracted on JUL-27-2001

**Note:** Click on the underlined CORPORATE LINK value for links to that company's environmental web pages. Click on the underlined MAPPING INFO value to obtain mapping information for the facility. Click on the underlined EPA FACILITY ID value to view EPA Facility information for the facility.

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HANDLER NAME: LOCKHEED SHIPBUILDING CO HANDLER ID: GAD981223688

STREET: 3126 RIVER DR EPA FACILITY ID: GAD981223688

CITY: THUNDERBOLT CORPORATE LINK: No

STATE: GA COUNTY: CHATHAM

ZIP CODE: 31404 MAPPING INFO: MAP

EPA REGION: 4

### CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
DANIEL RICHARD	P O BOX 9666	SAVANNAH	GA	31412	(912) 352-4932	Part A Permit
DANIEL RICHARD	P O BOX 9666	SAVANNAH	GA	31412	(912) 352-4932	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: LOCKHEED SHIPBLDG CO YARD 1 HANDLER ID: WAD009261991

STREET: 2929 16TH AV SW EPA FACILITY ID: WAD009261991

CITY: SEATTLE CORPORATE LINK: No

STATE: WA COUNTY: KING  
ZIP CODE: 98134 MAPPING INFO: MAP  
EPA REGION: 10

CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
STETZ ELIZABETH	2550 N HOLLYWOOD WAY STE 301	BURBANK	CA	915051055	(206) 728-3191	Notification

LIST OF SIC CODES AND DESCRIPTIONS

<u>SIC CODE</u>	<u>SIC DESCRIPTION</u>
3731	SHIP BUILDING AND REPAIRING
9999	NONCLASSIFIABLE ESTABLISHMENTS

HANDLER NAME: LOCKHEED SHIPBUILDING CONST HANDLER ID: WAD000814004

STREET: 2330 SW FLORIDA EPA FACILITY ID: WAD000814004  
CITY: SEATTLE CORPORATE LINK: No  
STATE: WA COUNTY: KING  
ZIP CODE: 98106 MAPPING INFO: MAP  
EPA REGION: 10

CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
LEVESQUE MICHELLE	2550 N HOLLYWOOD WAY STE 506	BURBANK	CA	915051055	(818) 847-0896	Notification

LIST OF SIC CODES AND DESCRIPTIONS

<u>SIC CODE</u>	<u>SIC DESCRIPTION</u>
9999	NONCLASSIFIABLE ESTABLISHMENTS

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Total Number of Facilities Displayed: 3



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Trinity Industries**

EPA REGION CODE: **4**

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Halter Marine Group**

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Halter Marine**

EPA REGION CODE: 4

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Palmer Johnson Savannah, Inc.**

ZIP CODE: **31404**

LOCATION ADDRESS: **3124 River Drive**

CITY NAME: **Thunderbolt**

COUNTY NAME: **Chatham**

STATE ABBREVIATION: **GA**

EPA REGION CODE: **4**

Results are based on data extracted on JUL-27-2001

Total Number of Facilities Displayed: 0



## RCRAInfo Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Containing: **Palmer Johnson**

Results are based on data extracted on JUL-27-2001

**Note:** Click on the underlined CORPORATE LINK value for links to that company's environmental web pages. Click on the underlined MAPPING INFO value to obtain mapping information for the facility. Click on the underlined EPA FACILITY ID value to view EPA Facility information for the facility.

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HANDLER NAME: PALMER JOHNSON DISTRIBUTOR HANDLER ID: ARR000003830

STREET: 7623 INDUSTRY

EPA FACILITY ID: [AR0002152601](#)

CITY: N LITTLE ROCK

CORPORATE LINK: No

STATE: AR

COUNTY: PULASKI

ZIP CODE: 72117

MAPPING INFO: [MAP](#)

EPA REGION: 6

### CONTACT INFORMATION

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF INFORMATION
ANDERSON RODNEY M	7623 INDUSTRY	N LITTLE ROCK	AR	72117	(501) 945- 0242	Notification

### LIST OF SIC CODES AND DESCRIPTIONS

SIC CODE	SIC DESCRIPTION
3589	SERVICE INDUSTRY MACHINERY, NOT ELSEWHERE CLASSIFIED

HANDLER NAME: PALMER JOHNSON DISTRIBUTORS  
LLC

HANDLER ID: ARR000001222

STREET: 406 LAKE LANE

EPA FACILITY ID: [AR0001392919](#)

CITY: N LITTLE ROCK

CORPORATE No

STATE: AR LINK:  
ZIP CODE: 72117 COUNTY: PULASKI  
EPA REGION: 6 MAPPING INFO: MAP

CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
SMITH JAMES	406 LAKE LANE	N LITTLE ROCK	AR	72117	(501) 945-0242	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON SAVANNAH INC HANDLER ID: GAD984313742

STREET: 3124 RIVER DR EPA FACILITY ID: GAD984313742

CITY: SAVANNAH CORPORATE LINK: No

STATE: GA COUNTY: CHATHAM

ZIP CODE: 31404 MAPPING INFO: MAP

EPA REGION: 4

CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
BOURGEOIS RICHARD	3124 RIVER DR	THUNDERBOLT	GA	31404	(912) 353-4372	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON DISTRIBUTORS HANDLER ID: ILD121268650

STREET: 731 DISTRICT DR EPA FACILITY ID: ILD121268650

CITY: ITASCA CORPORATE LINK: No

STATE: IL COUNTY: DU PAGE

ZIP CODE: 60143 MAPPING INFO: MAP

EPA REGION: 5

CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
BUSKIRK DAVE	731 DISTRICT DR	ITASCA	IL	60143	(312) 250-0370	Part A Permit
BUSKIRK DAVE	731 DISTRICT DR	ITASCA	IL	60143	(312) 250-0370	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON DISTR INC HANDLER ID: KS0000450718

STREET: 14931 W 99TH EPA FACILITY ID: KS0000450718

CITY: LENEXA CORPORATE LINK: No

STATE: KS COUNTY: JOHNSON

ZIP CODE: 66215 MAPPING INFO: MAP

EPA REGION: 7

CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
HARDESTY EDWIN	14931 W 99TH	LENEXA	KS	66215	(913) 492-5454	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON HANDLER ID: MND985674159

STREET: 3572 HOFFMAN RD E EPA FACILITY ID: 000010625576

CITY: WHITE BEAR LAKE CORPORATE LINK: No

STATE: MN COUNTY: RAMSEY

ZIP CODE: 55110 MAPPING INFO: MAP

EPA REGION: 5

CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
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GOLASKI JEFF	3572 HOFFMAN RD E	WHITE BEAR LAKE	MN	55110	(612) 770- 0440	Part A Permit
LEWIS JOHN	3572 HOFFMAN RD E	WHITE BEAR LAKE	MN	55110	(612) 770- 0440	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON DISTRIBUTORS HANDLER ID: MND982606485

STREET: 3572 HOFFMAN RD E EPA FACILITY ID: MND982606485  
CITY: VADNAIS HEIGHTS CORPORATE LINK: No  
STATE: MN COUNTY: RAMSEY  
ZIP CODE: 55110 MAPPING INFO: MAP  
EPA REGION: 5

CONTACT INFORMATION

<u>NAME</u>	<u>STREET</u>	<u>CITY</u>	<u>STATE</u>	<u>ZIP CODE</u>	<u>PHONE</u>	<u>TYPE OF INFORMATION</u>
GOLASKI JEFFREY	3572 HOFFMAN RD E	VADNAIS HEIGHTS	MN	55110	(612) 770- 0440	Part A Permit
GOLASKI JEFFREY	3572 HOFFMAN RD E	VADNAIS HEIGHTS	MN	55110	(612) 770- 0440	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON DISTRIBUTORS INC HANDLER ID: OKD982559452  
STREET: 4132 WILL ROGERS PKWY #300 EPA FACILITY ID: 000011240020  
CITY: OKLAHOMA CITY CORPORATE LINK: No  
STATE: OK COUNTY: OKLAHOMA  
ZIP CODE: 73108 MAPPING INFO: MAP  
EPA REGION: 6

CONTACT INFORMATION

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF INFORMATION
MCMASTERS LARRY	4132 WILL ROGERS PKWY #300	OKLAHOMA CITY	OK	73108	(405) 949-1393	Part A Permit
MCMASTERS LARRY	4132 WILL ROGERS PKWY #300	OKLAHOMA CITY	OK	73108	(405) 949-1393	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON DIST INC HANDLER ID: TXD988079810

STREET: 630 112TH ST EPA FACILITY ID: TXD988079810

CITY: ARLINGTON CORPORATE LINK: No

STATE: TX COUNTY: TARRANT

ZIP CODE: 76011 MAPPING INFO: MAP

EPA REGION: 6

#### CONTACT INFORMATION

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF INFORMATION
MITCHELL ROB	630 112TH ST	ARLINGTON	TX	76011	(817) 633-1494	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON HANDLER ID: WI0000444414

STREET: 1023 EGG HARBOR RD EPA FACILITY ID: 000010740522

CITY: STURGEON BAY CORPORATE LINK: No

STATE: WI COUNTY: DOOR

ZIP CODE: 54235 MAPPING INFO: MAP

EPA REGION: 5

#### CONTACT INFORMATION

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF INFORMATION
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HOFFMAN LEON	61 MICHIGAN ST	STURGEON BAY	WI	54235	(414) 743- 4412	Notification
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No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON DIST HANDLER ID: WID151866282

STREET: 4610 FEMRITE DR EPA FACILITY ID: WID151866282

CITY: MADISON CORPORATE LINK: No

STATE: WI COUNTY: DANE

ZIP CODE: 53716 MAPPING INFO: MAP

EPA REGION: 5

CONTACT INFORMATION

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF INFORMATION
HINZE DONALD	4610 FEMRITE DR	MADISON	WI	53716	(608) 222- 3532	Part A Permit
HINZE DONALD	4610 FEMRITE DR	MADISON	WI	53716	(608) 222- 3532	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON DIST INC HANDLER ID: WID988576757

STREET: 4410 DURAFORM LANE EPA FACILITY ID: WID988576757

CITY: WINDSOR CORPORATE LINK: No

STATE: WI COUNTY: DANE

ZIP CODE: 53598 MAPPING INFO: MAP

EPA REGION: 5

CONTACT INFORMATION

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF INFORMATION
SCHWARTZ	4410 DURAFORM	WINDSOR	WI	53598	(608) 846-	Part A Permit

JOE	LANE				9208	
SCHWARTZ JOE	4410 DURAFORM LANE	WINDSOR	WI	53598	(608) 846- 9208	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON INC HANDLER ID: WID130186489

STREET: 61 MICHIGAN ST EPA FACILITY ID: WID130186489  
CITY: STURGEON BAY CORPORATE LINK: No  
STATE: WI COUNTY: DOOR  
ZIP CODE: 54235 MAPPING INFO: MAP  
EPA REGION: 5

CONTACT INFORMATION

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF INFORMATION
PEARSON LARRY	61 MICHIGAN ST	STURGEON BAY	WI	54235	(414) 743- 4412	Part A Permit
PEARSON LARRY	61 MICHIGAN ST	STURGEON BAY	WI	54235	(414) 743- 4412	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON INC HANDLER ID: WID988623906

STREET: 128 KENTUCKY ST EPA FACILITY ID: WID988623906  
CITY: STURGEON BAY CORPORATE LINK: No  
STATE: WI COUNTY: DOOR  
ZIP CODE: 54235 MAPPING INFO: MAP  
EPA REGION: 5

CONTACT INFORMATION

				ZIP		TYPE OF
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NAME	STREET	CITY	STATE	CODE	PHONE	INFORMATION
HOFFMAN LEON	61 MICHIGAN ST	STURGEON BAY	WI	54235	(414) 743- 4412	Notification

No SIC Codes are available for the facility listed above.

HANDLER NAME: PALMER JOHNSON OF RACINE HANDLER ID: WID988618765

STREET: 811 ONTARIO ST EPA FACILITY ID: WID988618765  
CITY: RACINE CORPORATE LINK: No  
STATE: WI COUNTY: RACINE  
ZIP CODE: 53403 MAPPING INFO: MAP  
EPA REGION: 5

CONTACT INFORMATION

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF INFORMATION
HERMAN GENE	811 ONTARIO ST	RACINE	WI	53403	(414) 633- 8883	Notification

No SIC Codes are available for the facility listed above.

Go To Top Of The Page

Total Number of Facilities Displayed: 15

Releasable P. Anderson

2/24/04

*Shipyards*

## INTRODUCTION

At the request of the San Diego Regional Water Quality Control Board (SDRWQCB) through Region IX, EPA, the National Field Investigations Center-Denver conducted investigations of San Diego, California shipyards from March 18 to April 5, 1974. The objective of the investigations was an evaluation of shipyard facilities and waste control practices and the influence of these practices on San Diego Bay water quality factors, for the purpose of developing a model NPDES permit for San Diego commercial shipyards.

Studies conducted by SDRWQCB (Barry, 1972) and others have documented contamination of San Diego Bay sediments by high concentrations of heavy metals (arsenic, copper, mercury, nickel, and zinc) especially in areas of shipbuilding and ship repair activity. It was reported that the primary source of these toxic pollutants was primers and anti-fouling paints removed (by blasting or other methods) from ship hulls at repair facilities. In the SDRWQCB report, the uptake, accumulation, and toxicity of copper, lead, zinc, arsenic, mercury, nickel and chromium by marine organisms were detailed.

Most wastewaters in the San Diego Bay area are presently collected by interceptor sewers, treated, and discharged into the open Pacific Ocean, rather than into the Bay. Formerly, much wastewater was discharged directly to the Bay. For these reasons, at least one shipyard official has expressed the opinion that high concentrations of metals in San Diego Bay sediments could have been deposited in times past, either from presently abandoned sewer outfalls or from discontinued shipyard operations.

To evaluate the influence of pollutants from shipyards on San Diego Bay, samples of solid materials (spent abrasives, hull scrapings, etc.) and wastewater discharges were collected from shipyards, and sediment cores and marine biota were collected from the Bay in the immediate vicinities of shipyards. Spent abrasives (including old primer and antifouling paint) from these shipyards contained consistently high concentrations of copper, zinc, lead, and chromium, and high, but somewhat variable, concentrations of cadmium, tin, mercury, and arsenic (Table 1). Similarly, sediment cores taken along transects directly out into the Bay from these shipyards also contained high metals concentrations (Table 2). Analysis of sediment core data reveals that the highest heavy metals concentrations generally occurred at the surface of the core (rather than deeper in the bottom of the Bay), and at locations on the transects nearest the shipyards. Metals concentrations diminished with distance from shore and with depth in the Bay bottom. Microscopic examination of these sediments revealed a similar pattern: freshly blasted abrasive and paint chips were most evident in surficial sediments nearest the shipyards. Sediments from locations farther out into the Bay contained progressively lower densities of abrasives, and these abrasives were more weathered. There were no definite trends in the distribution of specific metals, reflecting the diversity of composition of antifouling paints used on ship hulls.

Water samples were collected from some of the limited number of wastewater outfalls located at San Diego Bay shipyards. Concentrations of heavy metals were extremely high in these samples (Table 3), reflecting the fact that the water had contacted materials cleaned from ship and boat hulls before being discharged. A leaching test of limited extent and duration (spent abrasive from 5 shipyards exposed to relatively uncontaminated seawater for 12 days) demonstrated that heavy metals, especially copper and zinc, may readily dissolve from materials removed from ship hulls (Table 4).

Marine biota were collected from San Diego Bay in the immediate vicinities of shipyards. The flesh of grazing molluscs (Crepidula) from these areas contained high metals concentrations, and the flesh of filter-feeding sea squirts generally contained lesser concentrations (Table 5).

It is concluded that San Diego Bay is being polluted by heavy metals from shipyards, and that the most significant source of these pollutants is materials (antifouling paints and primers) removed from ship hulls. It was the intent of Congress in establishing the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500) that the discharge of pollutants from all sources including shipyards be abated and, where technologically and economically feasible, eliminated. The following sections of this report detail methods by which abatement of pollutant discharges from shipyards may be accomplished, and present a model permit for application to San Diego ship repair and shipbuilding facilities.

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#### Reference

Barry, Joseph N. 1972.

Staff report on wastes associated with shipbuilding and repair facilities in San Diego Bay. California Regional Water Quality Control Board, San Diego Region. 46 pp.

TABLE 1

CONCENTRATIONS OF HEAVY METALS IN SOLID MATERIALS (SPENT ABRASIVE AND OLD PAINT AND PRIMER)  
FROM SAN DIEGO BAY SHIPYARDS

Sample Location	Date Collected	Metal Concentration (mg/kg)							
		Cd	Cr	Cu	Pb	Sn	Zn	Hg	As
Kottenburg sump	3/27/74	13	4.5	14,000	2,600	38	4,100	190	220
Harbor near bow*	3/26/74	2.2	720	2,300	1,300	170	1,300	8.4	23
port side midship		1.8	170	3,800	940	62	660	14	15
near stern		2.5	370	5,500	3,300	100	1,500	7.0	0.5
Campbell	3/26/74								
3,000 ton dock near bow		1.4	670	2,300	610	210	840	2.7	8
port side midship		2.0	1,200	3,300	3,100	250	1,300	4.0	19
starboard midship		3.0	1,500	2,800	1,000	220	560	11	8
near stern		3.3	1,300	3,200	1,000	240	680	9.1	20
1,100 ton dock near bow		1.1	32	1,400	230	150	320	0.4	12
port side midship		1.4	43	3,300	280	170	870	0.7	17
starboard midship*		1.5	34	1,200	200	140	1,200	< 0.1	0.3
near stern		1.5	60	3,000	1,100	140	1,300	0.5	4
NASSCO	3/27/74								
dry dock, composite		3.1	51	4,200	900	180	1,100	0.8	18
marine railway, bow		1.4	38	10,000	3,000	130	400	1.6	< 0.2
midship*		2.3	50	10,000	1,500	100	520	0.9	2
stern		2.3	49	17,000	3,000	140	740	2.1	7
Navy graving dock, composite*	3/26/74	2.4	13	1,200	31	130	6,800	0.1	< 0.2
San Diego Marine									
marine railway composite*	3/28/74	3.6	580	6,000	1,200	200	1,000	0.2	< 0.2

\*Subsamples used in leaching tests

TABLE 2

HEAVY METALS CONCENTRATIONS IN SEDIMENT CORES  
SAN DIEGO BAY

Sample Location	Date	Transect Number	Distance from Shore (ft)	Core Number	Depth from Surface of Core (in)	Metal Concentration (mg/kg)							
						Cd	Cr	Cu	Pb	Sb	Zn	Hg	As
NASSCO marine railway	3/29/74	1	20	1	surf.	0.7	43	1,390	810	48	400	1.6	12
			20	1	9	1.6	93	1,530	1,320	91	630	3	*
			100	2	surf.	2.6	87	660	450	32	520	5	6
			100	2	12	2.4	98	560	490	<20	530	2	0.3
			100	2	24	1.3	38	180	94	<20	150	1.3	17
			200	3	surf.	5.3	35	570	330	<20	690	24	0.2
			200	3	12	4.6	320	160	290	<20	1,910	11	4
			200	3	24	7.2	69	100	460	<20	1,010	16.	12
			300	4	surf.	6.0	140	480	370	<20	870	8.3	12
			300	4	12	4.2	95	320	180	<20	630	5.2	5
			300	4	24	7.0	160	470	340	<20	1,020	3.5	0.4
			400	5	surf.	4.4	89	290	240	46	650	7.6	8
			400	5	12	6.1	48	360	550	<20	1,590	6.7	2
			400	5	24	7.0	160	470	340	<20	1,020	3.5	0.4
NASSCO shipway	4/4/74	11	100	1	surf.	<0.5	77	220	120	<20	490	1.9	8
			100	1	12	<0.5	16	73	56	<20	130	1.3	2
			200	2	surf.	<0.5	71	130	110	<20	240	2.8	9
			200	2	12	<0.5	90	150	85	<20	340	5.5	7

\*Insufficient Sample

TABLE 2

HEAVY METALS CONCENTRATIONS IN SEDIMENT CORES  
SAN DIEGO BAY  
(CONTINUED)

Sample Location	Date	Transect Number	Distance from Shore (ft)	Core Number	Depth from Surface of Core (in)	Metal Concentration (mg/kg)						
						Cd	Cr	Cu	Pb	Sn	Zn	Hg
Campbell concrete drydock	4/1/74	2	30	1	surf.	2.7	27	150	350	<20	450	0.85
			30	1	12	1.6	48	130	540	<20	470	4.4
			30	1	24	1.5	23	110	64	35	150	12
			100	2	surf.	1.5	15	180	130	43	250	3.6
			100	2	12	4.4	86	110	140	44	280	1.1
			100	2	24	1.9	45	22	67	<20	170	4.3
			200	3	surf.	1.3	32	69	53	<20	150	0.6
			200	3	12	5.1	62	140	130	<20	410	4.6
			200	3	24	4.6	83	92	130	<20	320	1.
			300	4	surf.	3.1	56	140	130	<20	180	1.5
			300	4	12	3.0	49	110	110	<20	240	1.0
			300	4	24	5.4	100	160	140	52	360	1.6
			400	5	surf.	3.0	57	150	120	67	310	1.6
			400	5	12	4.0	29	110	100	<20	270	3.7
			400	5	24	3.9	15	72	45	<20	210	1.4

TABLE 2

HEAVY METALS CONCENTRATIONS IN SEDIMENT CORES  
SAN DIEGO BAY  
(CONTINUED)

Sample Location	Date	Transect Number	Distance from Shore (ft)	Core Number	Depth from Surface of Core (in)	Metal Concentration (mg/kg)						
						Cd	Cr	Cu	Pb	Sa	Zn	Hg
<u>Campbell</u> marine railway	4/1/74	3	20	1	surf.	1.9	55	400	120	28	290	1.0
			100	2	surf.	3.1	12	310	170	66	360	4.3
			100	2	12	4.3	9.5	150	140	<20	310	4.3
			100	2	24	3.3	69	190	110	56	290	4.5
			200	3	surf.	2.9	140	170	170	49	300	2.3
			200	3	12	1.6	6.8	55	48	<20	220	2.0
			200	3	24	3.5	18	160	120	<20	460	2.3
			300	4	surf.	2.4	66	190	170	<20	290	
			300	4	12	3.7	67	110	110	46	280	2.5
			300	4	24	3.8	82	130	140	63	210	2.5
			400	5	surf.	1.2	12	86	48	<20	150	0.98
			400	5	12	1.7	45	69	84	34	170	1.0
			400	5	24	0.5	1.9	19	7.7	<20	77	0.48
<u>Harbor Boat &amp; Tacht</u> east marine railway	4/2/74	4	20	1	surf.	2.4	200	1,420	880	64	1,210	1.1
			20	1	12	3.6	52	1,910	600	52	2,010	33
			100	2	surf.	2.5	150	330	370	57	690	8.0
			100	2	12	3.7	54	560	110	74	790	4.4

TABLE 2

HEAVY METALS CONCENTRATIONS IN SEDIMENT CORES  
SAN DIEGO BAY  
(CONTINUED)

Sample Location	Date	Transect Number	Distance from Shore (ft)	Core Number	Depth from Surface of Core (in)	Metal Concentration (mg/kg)						
						Cd	Cr	Cu	Pb	Sr	Zn	Hg
<u>Harbor Boat &amp; Yacht</u> east marine railway	4/2/74	4	200	3	12	1.4	5.9	240	32	80	120	4.6
			300	4	surf.	0.8	41	210	66	47	150	6.3
			300	4	12	<0.5	8.8	70	13	28	35	2.5
			400	5	surf.	0.8	18	110	41	<20	160	2.5
<u>Harbor Boat &amp; Yacht</u> west marine railway	4/2/74	5	20	1	surf.	2.9	74	1,240	590	89	920	12
			20	1	12	2.7	37	890	200	<20	650	23
			100	2	surf.	1.8	83	620	220	46	520	8.4
			100	2	12	<0.5	8.0	3	1.9	<20	15	0.12
			200	3	surf.	2.6	5.2	3	1.3	<20	13	0.07
			200	3	12	3.9	7.8	4	3.9	<20	13	3.6
			200	3	24	1.4	26	92	8.3	<20	150	3.8
<u>Kettanburg</u> west marine railway	4/3/74	6	20	1	surf.	2.0	5.1	5,500	760	74	960	39
			20	1	12	2.0	10	1,620	430	<20	610	39
			20	1	24	2.2	33	220	610	42	390	46
			100	2	surf.	2.3	66	1,400	210	<20	560	13
			200	3	surf.	1.8	47	410	130	<20	270	9.6
			200	3	12	1.2	24	110	41	36	90	120

TABLE 2

HEAVY METALS CONCENTRATIONS IN SEDIMENT CORES  
SAN DIEGO BAY  
(CONTINUED)

Sample Location	Date	Transect Number	Distance from Shore (ft)	Core Number	Depth from Surface of Core (in)	Metal Concentration (mg/kg)							
						Cd	Cr	Cu	Pb	Sn	Zn	Hg	As
<u>Kettensburg</u> west marine railway	4/3/74	6	300	4	surf.	4.0	71	500	100	54	480	10	9
			300	4	12	3.0	30	220	88	91	340	14	9
<u>Kettensburg</u> east of yard drain	4/3/74	7	20	1	surf.	2.8	45	570	140	41	410	23	5
			20	1	12	1.1	16	140	43	<20	160	15	8
			100	2	surf.	2.0	23	150	43	49	170	9.6	5
			100	2	12	2.2	40	240	91	45	260	8.8	2
			200	3	surf.	1.1	25	71	43	33	130	2.4	1
			200	3	12	1.0	14	93	65	<20	140	2.7	0
			300	4	surf.	2.6	57	330	85	65	350	7.5	3
			300	4	12	12	73	380	77	49	360	11	4
<u>Navy off graving</u> dock gates	4/4/74	8	20	1	surf.	6.8	71	330	130	53	550	2.2	2
			20	1	12	7.0	130	600	220	55	780	3.5	4
			100	2	surf.	5.6	52	250	130	71	290	2.3	3
			100	2	12	5.5	29	170	130	<20	260	3.3	0
			200	3	surf.	4.4	44	210	64	49	310	11	2
			200	3	12	3.6	35	110	3.3	33	230	1.5	0
			200	3	24	3.1	28	140	8.5	<20	240	2.3	6

TABLE 2  
HEAVY METALS CONCENTRATIONS IN SEDIMENT CORES  
SAN DIEGO BAY  
(CONTINUED)

Sample Location	Date	Transect Number	Distance from Shore (ft)	Core Number	Depth from Surface of Core (in)	Metal Concentration (mg/kg)						
						Cd	Cr	Cu	Pb	Sb	Zn	Hg
Navy off graving dock gates	4/4/74	8	300	4	surf.	5.0	29	140	57	33	330	3.0
			300	4	12	3.2	26	110	6	49	300	3.1
			400	5	surf.	2.1	33	55	41	30	130	1.1
Navy 120 ft from graving dock, 50 ft to either side of Transect No. 8.	4/4/74	9	120	1	surf.	4.9	9.9	170	49	<20	160	2.3
			120	1	12	4.6	95	2,070	690	<20	1,590	4.1
			120	2	surf.	5.6	34	210	42	36	520	1.8
			120	2	12	8.6	120	330	320	39	620	3.0
Navy 250 ft. from graving dock, 50 ft to either side of Transect No. 8	4/4/74	10	250	1	surf	5.4	47	180	44	29	390	2.1
			250	1	12	5.7	97	1,330	160	48	420	1.0
			250	2	surf.	17	93	230	130	44	420	3.3
			250	2	12	6.7	110	210	110	31	470	2.8

TABLE 3

METALS CONCENTRATIONS IN EFFLUENTS AND RECEIVING WATERS  
SAN DIEGO BAY SHIPYARDS

Sample Description	Date	Metal Concentration (mg/l)							
		Cd	Cr	Cu	Pb	Sn	Zn	As	Hg
<u>Kettanburg</u> , sump influent 1 hr after rain (0930)	3/27/74	<0.01	0.06	11	0.56	<1	1.1	0.20	40
sump influent during hull cleaning (1125)	3/27/74	<0.01	0.04	6.1	0.31	<1	0.47	0.13	44
sump influent no hull cleaning (1420)	3/27/74	<0.01	0.05	3.7	0.35	<1	0.80	0.07	38
sump effluent 1 hr after rain (0930)	3/27/74	<0.01	0.21	32	2.2	<1	3.7	0.21	200
sump effluent during hull cleaning (1125)	3/27/74	0.02	0.34	57	4.1	<1	6.1	0.52	930
sump effluent no hull cleaning (1420)	3/27/74	<0.01	0.09	11	0.88	<1	1.6	0.15	130
<u>Navy</u> , air scrubber discharge, bow	3/28/74	<0.01	0.07	2.0	0.43	<1	0.96	<0.01	3.0
midship	3/28/74	<0.01	0.03	0.30	0.02	<1	2.6	<0.01	2.0
stern	3/28/74	<0.01	<0.01	0.02	0.01	<1	0.05	<0.01	21
graving dock sump discharge after 1 minute pumping (0930)	4/4/74	0.05	0.04	0.14	0.19	16	0.35	<0.01	<0.1
graving dock sump discharge after 5 minutes pumping (0934)	4/4/74	0.05	0.03	0.11	0.14	16	0.35	<0.01	<0.1
receiving water, 30 ft off graving dock (1020)	4/4/74	0.05	0.03	0.03	0.20	18	0.14	<0.01	<0.1
graving dock sump discharge after 1 minute pumping (1501)	4/4/74	0.06	0.04	0.14	0.18	16	0.60	<0.01	1.1
graving dock sump discharge after 5 minutes pumping (1509)	4/4/74	0.05	0.05	0.20	0.09	14	0.52	<0.01	<0.1

TABLE 4

RESULTS OF LEACHING TESTS.  
SPENT ABRASIVE (APPROXIMATELY 100 GRAMS) EXPOSED TO SEAWATER (APPROXIMATELY 1 LITER).  
COLLECTED FROM SAN DIEGO BAY NEAR SHELTER ISLAND  
EXPOSURE PERIOD APRIL 3, 1974 TO APRIL 15, 1974

Sample Location	Date Collected	Metal Concentration (mg/l)						
		Cd	Cr	Cu	Pb	Sn	Zn	As
Harbor Boat and Yacht	3/26/74	<0.01	0.04	2.7	0.06	<1	0.45	0.08
Campbell Industries	3/26/74	<0.01	0.01	2.2	0.03	<1	1.2	<0.01
MASSCO	3/27/74	<0.01	0.03	3.1	0.05	<1	0.38	<0.01
Navy	3/28/74	<0.01	<0.01	<0.01	0.07	<1	0.45	<0.01
San Diego Marine Construction	3/28/74	<0.01	0.02	1.1	0.07	<1	0.03	0.01
Seawater Blank	4/3/74	0.12	0.14	0.05	0.12	<1	0.07	<0.01

TABLE 5

## METALS CONCENTRATIONS IN MARINE ORGANISMS COLLECTED

FROM VICINITIES OF SAN DIEGO BAY SHIPYARDS

Sample Description	Date	Metal Concentration (mg/kg)							
		Cd	Cr	Cu	Pb	Zn	Sn	As	Hg
Kettanburg molluscs ( <u>Crepidula</u> )	4/3/74	2.1	2.4	260	7.0	100	130	Insufficient Sample	Insufficient Sample
Kettanburg sea squirts	4/3/74	0.1	13	150	14	92	110		
NASSCO molluscs ( <u>Crepidula</u> )	3/29/74	4.7	1.6	270	2.2	260	<20		
NASSCO sea squirts	3/29/74	Insufficient Sample							
Campbell molluscs ( <u>Crepidula</u> )	4/1/74	2.6	5.9	290	9.3	95	240		
Campbell sea squirts	4/1/74	0.5	13	19	5.6	29	150		
Harbor molluscs ( <u>Crepidula</u> )	4/2/74	1.1	2.9	210	2.5	74	190		
Harbor sea squirts	4/2/74	<0.1	9.5	28	8.7	41	66		
Navy - molluscs ( <u>Crepidula</u> )	4/4/74	Insufficient Sample						Insufficient Sample	Insufficient Sample
Navy - sea squirts	4/4/74	0.2	16	8	9.9	6.7	<20		
Alcohol (Preservative) Blank(mg/l)	4/4/74	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<0.01	<0.1

## RATIONALE FOR WATER POLLUTION CONTROL AT SAN DIEGO SHIPBUILDING AND SHIP REPAIR FACILITIES.

### INTRODUCTION

The Federal Water Pollution Control Act Amendments of 1972 (5) require that the discharge of all pollutants be controlled insofar as is technically and economically feasible. In addition, the Act requires that all point sources discharging to the waters of the U.S., including the territorial seas, apply for a NPDES (National Pollutant Discharge Elimination System) permit. One such class of point sources includes the shipbuilding and repair industry.

A search of published information, representing such varied locations as Pearl Harbor, Hawaii, San Diego and Newport Bay, California, Baltimore Harbor, Maryland and the James and Elizabeth Rivers in Virginia, indicated high concentrations of pollutants, primarily heavy metals in sediments in the vicinity of shipyards (2, 10, 17, 19, 20, 21 and 23). This relationship was subsequently verified and additional information gained by the EPA, NFIC-D field surveys in San Diego, California and Newport News, Virginia. The NFIC-D studies also included inspections of 25 shipyards on the East and West Coasts and Hawaii. The emphasis in this work was to characterize existing wastewater discharges, assess presence of pollutants in sediments of receiving waters, observe current pollution abatement programs, and evaluate pollution control needs.

The characteristics of sanitary wastes, cooling water and boiler blowdown are well documented in the literature and a detailed description is not within the scope of this rationale. However, from the NFIC-D field surveys and other available references, the characteristics of liquid discharges from ship repair operations may be described. Basically, discharges from graving docks during blasting and painting operations contain metals in both the particulate and soluble form. In addition, some blast grit is carried by water within the dock resulting in the discharge of suspended and settleable solids. While floating drydocks and marine railways may not have the confined liquid discharges as do graving docks, the pollutants reaching the receiving water are the same in character.

Control and treatment technology measures are presented in terms of types of wastes generated and production process or type of structure used for repair of building (i.e., graving docks, floating drydocks, marine railways, shipways and vertical hoists). As may be noted in the discussion which follows, the control measures rely heavily on the segregation of wastewaters and general housekeeping. It is the firm belief of NFIC-D that this is a defensible and responsible approach.

As control and treatment measures are presented, it may be noted that numerical effluent limitations have previously been established for the discharge of all sanitary wastes and the discharge of cooling water and boiler blowdown from onshore facilities. Shipbuilding and repair wastes on the other hand are to be controlled by good housekeeping practices which will essentially eliminate the discharge of pollutants. This, coupled with the fact that discharges from floating drydocks, marine railways, some shipways and vertical hoists, are not discharged in a manner such that representative sampling can be accomplished, has resulted in the recommendation of an alternative approach to numerical effluent limitations. Therefore, each shipyard will be required to submit a WATER POLLUTION CONTROL PLAN detailing the control measures to be applied in the operation of shipbuilding and repair facilities including graving docks, floating drydocks, marine railways, shipways and vertical hoists. The plan must address each of the waste source categories listed below if they exist at the facility, detailing specific methods by which pollution from these sources will be controlled. Also to be included in the plan is a schedule setting forth the earliest time by which the control measures can be implemented and the times for any intermediate steps leading to complete implementation. The objective in handling each of the waste sources is stated in the following section along with a method of meeting the objective. It is recognized that other control methods may exist. These alternative methods will be acceptable provided the objectives are accomplished.

## CONTROL AND TREATMENT TECHNOLOGY

### On-Shore Waste Sources

#### Sanitary Wastes

In compliance with the Federal Water Pollution Control Act Amendments of 1972, information defining secondary treatment was published in the Federal Register, August 17, 1973 (4). The requirements for secondary treatment set forth August 17, 1973, must be met no later than July 1, 1977 (5). These requirements will be applied to sanitary wastes from shipyards whether these emanate from shore facilities or ships being repaired. ~~Pre-treatment standards were published in the Federal Register on November 8, 1973 regulating discharges to municipal systems.~~

#### Cooling Water and Boiler Blowdown

Effluent guidance for cooling water discharges and boiler blowdown has been suggested by E.P.A. (22). The guidance rationale centers upon in-plant measures to control the discharge of corrosion inhibiting substances. Suggested interim effluent limitations are based on using only enough additive to adequately protect the system against corrosion and by developing tighter process techniques within the individual cooling systems or by changing to a different base corrosion inhibitor.

Suggested final effluent limitations are at levels which will not adequately protect cooling systems against corrosion. Therefore, three alternatives exist for meeting final limitations. First, the discharge may be treated. Second, new inhibitors without pollutional significance may be developed. Third, the discharge may be eliminated (22).

#### Miscellaneous Industrial Wastes

Miscellaneous industrial activities, for example metal plating operations, for which effluent limitations have been established may exist at individual shipyards. In these cases, limitations for the particular standard industrial classification apply. Where effluent guidelines are not yet established for the particular industrial classification, limitations will be applied as soon as they are proposed.

#### Wastes from Shipbuilding and Repair Facilities

Shipbuilding and repair facilities refer to those facilities within a shipyard at which ships are docked for repair or new ships are constructed. Common names of these facilities are; graving docks, floating drydocks, marine railways, and shipways. In addition, other repair facilities may be used including boat hoists of various types.

#### Graving Docks

A graving dock is a basin into which a ship may be floated. Usually constructed of concrete, the basin is isolated from the adjacent waterway with a gate. Permanently installed pumps dewater the dock and the ship comes to rest on previously positioned keel blocks. Drainage channels in the floor slope to a common point and convey water to the dewatering pumps. After dewatering is completed and during ship repair or new construction, miscellaneous water sources within the dock also drain to the sump and are discharged to the receiving water via pumps which are commonly referred to as drainage pumps or stripping pumps.

Sanitary Wastes - Shipboard sanitary wastes must be collected and must receive secondary treatment prior to discharge. In order to minimize the potential for leaching and other transport of metals from spent abrasive<sup>1</sup> and new paint, this liquid waste should not contact the floor of the graving dock.

For the proper handling of shipboard sanitary wastes, several alternatives exist. One, sanitary wastes may be discharged directly to a shipyard sewer system. Two, until sewer lines are available at dockside, sanitary wastes may be discharged to a holding tank for subsequent

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<sup>1</sup>The term spent abrasive as used throughout this rationale refers to used blast grit mixed with particles of scale, rust, old paint and marine growths removed from ships during blasting operations.

removal from the graving dock and drainage to a sewer system. In either case preventing sanitary wastes from contacting the dock floor eliminates leaching and other transport of metals from spent abrasive. Conduits for sanitary wastes have been observed leaking at their point of connection to the hull. This condition is not acceptable and water-tight connections are necessary.

Cooling Water - Again the objective is to eliminate the opportunity for leaching and other transport of metals. The practice of allowing cooling water to cascade to the floor of the dock is unacceptable. A water-tight connection fitting at the hull and a conveyance hose are necessary. Cooling water may be discharged directly to the graving dock sump or receiving water. The important point, however, in the handling of shipboard cooling water in graving docks is to eliminate contact with spent abrasive.

Hydrostatic Relief Water - Contact between relief water and the dock floor must be minimized to preclude leaching and other transport of metals from spent abrasive. Many graving docks are designed to allow continuous hydrostatic relief. This reduces the load on structural members thereby resulting in economy of construction. The relief water, though normally of high quality, may create problems depending on the design of the relief system. It is not uncommon for relief systems to be designed such that relief water does not contact the floor of the graving dock (11, 25). In other systems, however, relief water enters the dock at many different points and flows across the floor of the graving dock in sheetflow to a drainage gutter. In the latter case, relief water is allowed to contact spent abrasive and new paint, thus providing an opportunity for leaching and other transport of heavy metals. In-plant control in the form of collection of relief water and direct discharge to the drainage sump or receiving water will eliminate this opportunity.

Gate Leakage - Invariably some leakage occurs around the graving dock gate. The main drainage channel leading to the sump is normally located within 100 feet of the gate. This area often times accumulates spent abrasive and new paint on the dock floor. As gate leakage water flows to the drainage channel in sheetflow, another opportunity for pollution from heavy metals is provided. The objective is to eliminate this opportunity by preventing gate leakage water from contacting spent abrasive.

To solve this problem a means of intercepting leakage water must be provided. Angle iron sealed to the dock floor immediately inside the gate would be effective in conveying leakage water to one side of the dock. Once in this position, leakage water will flow to the drainage sump with a minimum of contact with spent abrasive.

**Floating Materials and Settleable Solids** - Floating wastes are often discharged from graving docks. New paint, oil and grease, and miscellaneous floating artifacts are carried by drainage water to the graving dock sump and may be discharged during repair activities and dewatering. Similarly, settleable solids are discharged during the above intervals of activity.

The discharge of floating materials and settleable solids must be eliminated. In-plant control measures may be used to eliminate the discharge of floating materials and minimize the discharge of settleable solids. These wastes may be eliminated from the sumping discharge with a baffle and weir arrangement. A baffle and weir installed in the drainage channel will trap floating pollutants and gross settleable solids for subsequent removal just prior to flooding. Removable sediment traps are being used effectively in drainage channels (15) and may require less maintenance than weirs.

**Air Scrubber Water** - Internal tank blasting results in the discharge of ventilation air laden with particulates. Where removal of particulates is practiced, either wet scrubbers or bag house collectors are usually used. When wet scrubbers are used scrubbing waters must not contact spent abrasive. This objective may be accomplished by conveyance of scrubbing waters directly to the drainage gutter. Where wet scrubbing is used a sump should be provided to remove particulates from the water. The use of bag house collectors eliminates this water source entirely.

**Trash** - Miscellaneous trash accumulates on the floor of graving docks during shipbuilding and ship repair operations. If not removed prior to undocking, this material is discharged during dewatering and ship launching. The discharge of trash must be eliminated. Two possible methods of accomplishing this objective are the diligent use of waste receptacles or a thorough cleanup of trash prior to flooding.

**Spent Abrasive and New Paint** - The most significant pollutants from shipyards are the heavy metals present in spent abrasive. Spent abrasive accumulates on the floor of the graving dock during blasting and painting operations. The old paint particles present in the used grit are a potential source of pollution. With a much greater surface area exposed than was present while on the hull, the old paint is subject to leaching of heavy metals. The objective is to prevent the possibility for the discharge of spent abrasive, leaching and other transport of heavy metals.

Because blasting is followed almost immediately by painting, some new paint is also present in the form of a thin coating on the surface of the spent abrasive. The quantity of new paint mixed with spent abrasive is directly related to the quantity of heavy metals subject to leaching.

Estimates have been made of paint losses indicating approximately 5 percent of the total paint to be applied to the hull is lost to the drydock and can be discharged to the receiving water. These losses include: paint spilled within the drydock; excess applied paint which drips to the floor of the dock; overspray due to improper use of spray equipment; and wind carried paint which lands in the dock.

The discharge of heavy metals can essentially be eliminated by in-plant control measures. The primary control measure necessary is the thorough cleanup of spent abrasive prior to vessel launching. Shipyard inspections conducted by NFIC-D revealed that cleanup prior to vessel launching is currently being accomplished at several graving docks. The degree of cleanup ranges from that attainable with front-end loaders to broom clean conditions. In order to essentially eliminate the discharge of spent abrasive and consequently heavy metals, cleanup to broom clean conditions must be accomplished prior to vessel launching.

An important consideration in the cleanup of spent abrasive is timing. Dry cleanup of spent abrasive must be accomplished in order to eliminate the opportunity for leaching and other transport of heavy metals. The previously discussed control measures will enhance cleanup conditions by preventing water sources from contacting spent abrasive. One additional water source, that of precipitation, however, is uncontrollable. The leaching potential of precipitation bears special consideration in order to rationally determine cleanup timing. Precipitation chemistry has been studied in the inland areas of the U.S. (1,3,6,8,9,12 and 18) and on both Coasts (7,13,16 and 24). Findings indicate there is a general increase in the acidity of precipitation from west to east across the U.S. (8,14 and 18). While the pH of rainwater on the West Coast is normally 4.5 to 5.5, East Coast measurements indicate even greater acidity with pH ranging approximately one unit lower.

The fact that the above described acidic precipitation is capable of leaching heavy metals from spent abrasive, is rationale enough for making every reasonable effort to eliminate their contact. Thus, spent abrasive must be removed from the dock to broom clean conditions as soon as is technically possible. Because blasting and painting is carried out almost continuously and concurrently, cleanup likewise must be accomplished by sections as soon as blasting and painting of that section is completed.

Various cleanup techniques have been used. Small front-end loaders are effective in removing the bulk of spent abrasive and are used at many shipyards. Brooms and shovels are also used as a follow up to loaders at several yards. The suggestion has been made to treat the floors of concrete docks with an epoxy seal coat to enhance dry cleanups. Vacuum devices have been used (15), however the exceptionally large units necessary to pick up wet abrasive have proven unsatisfactory. Now, smaller mobile vacuum cleaners and low profile sweepers which sweep the material into a hooper will no doubt also find application.

The disposal of spent abrasive must be accomplished in such a manner that surface water and ground water is protected. Where landfilling is the method of disposal used, strict compliance with local regulations must be maintained.

## Floating Dry Docks

Ship repair and maintenance and occasionally new ship construction is accomplished on floating drydocks. A floating drydock is a structure consisting of a platform and associated ballast tanks used to raise ships above water level for work requiring exposure of the entire hull. By flooding the ballast tanks, the dock platform is allowed to sink beneath the water surface to the desired level. A ship is then moved over the dock and positioned in accordance with preset keel blocks on the dock platform. This position is maintained as the ballast tanks are dewatered and the drydock floated. Floating drydocks are constructed of wood, steel or concrete and may be designed to operate as a single unit with a continuous platform or as multiple units with a sectional platform. Liquids discharged onto the platform flow in sheetflow to the end of the dock or to intermediate outlets commonly located along either side of the platform.

The similarities between graving docks and floating drydocks are such that the in-plant control measures and requirements for sanitary wastes, cooling water, air scrubber water, trash and spent abrasive are identical. Spent abrasive is currently being removed from some floating drydocks to broom clean conditions prior to vessel launching and the detailed requirements set forth for graving docks also apply to floating drydocks. Obviously relief water and gate leakage are water sources which do not exist on floating drydocks and are therefore not addressed. Floating wastes are not considered from floating drydocks because application of the control measures discussed essentially eliminates liquid from the working surface and thus precludes the discharge of floating wastes. At least one shipyard has provided control of wastewater by converting one of the shore-side ballast tanks to an optional holding tank, conveying wastewaters to it by trimming the dock shoreside and pumping out the tank for subsequent disposal.

## Marine Railways

A marine railway consists of an inclined groundway extending into the water with a support structure that moves on the groundway tracks via wheels or roller trains. The support unit is lowered into the water to a proper depth and the ship is moved into position. Motor driven hoisting equipment moves the unit shoreward until the ship comes to rest on preset keel blocks. As the ship is drawn up the railway and out of the water, ballast blocks are set on either side of the keel for additional support.

Pollutants generated in the operation of marine railways originate in the blasting, scrubbing, washing, or painting of vessels. These pollutants are carried to the receiving water by tidal action, precipitation, wind, and miscellaneous flows of water used in the work area. At railways without working platforms, pollutants fall directly to the shore or water. At platform-type railways, pollutants fall to the shore or water, either directly beyond the platform and through openings in the platform, or indirectly during platform cleanup.

To prevent polluttional materials from falling into the tidal zone or into the water, vessels on marine railways must be hauled beyond the tidal plane whenever possible. In addition, the contact of waste materials with the shore or water must be prevented to the greatest extent possible. Methods by which this may be accomplished include, but are not limited to: 1) filling or covering the spaces between planks to prevent materials from falling through; 2) use of plywood sections to cover openings along the keel; 3) use of shrouding or temporary platforms under the stern.

Materials which contact the shore must be removed frequently to prevent their being washed into the receiving water. This can be accomplished by use of small front-end loaders or shovels. Cleanups can be expedited by installation of a smooth impervious surface beneath the way. A weir located in the tidal zone behind the ship would retain much of the spent abrasive that had escaped removal from shore. Such a weir should extend as high above the ground surface as possible without interfering with railway operation. Accumulated solids would be removed frequently from behind the weir.

### Shipways

The term shipway is sometimes used synonymously with graving dock as defined earlier in this rationale. However, for purposes of this rationale, shipway is herein defined as a way which is used for the construction of new ships. Normally inclined, the shipway may be either entirely above water level or it may be partially below the water surface and isolated from the adjacent waterway by means of a gate.

For a description of the water pollution control measures applicable to shipways reference is made to earlier sections of this rationale. Specifically, shipways entirely above water level are analogous to marine railways and the appropriate rationale applies. On the other hand shipways partially below water level are very similar to graving docks and thus the graving dock rationale applies.

### Vertical Hoists

Various types of vertical hoists are used at small boat repair facilities. Boats are lifted from the water and moved to an area on shore where the repair work is accomplished. Wastes generated at the repair area include marine growths and old paint removed from boat hulls.

The control measures presented previously in this rationale are also applicable to these small boat repair facilities and must accomplish the elimination of repair wastes from entering the receiving water. Control must accomplish thorough cleanup to broom clean conditions of old paint and abrasive where applicable.

#### COMPLIANCE DETERMINATION

##### Selection of Pollutant Parameters

Major categories of wastewater parameters of pollutorial significance for the shipbuilding and repair industries include:

###### Solids

1. suspended solids
2. settleable solids

###### Metals (particulate and dissolved)

1. lead
2. chromium
3. arsenic
4. copper
5. zinc
6. mercury
7. tin
8. cadmium

###### Oil and grease

###### Flow (volume of discharge)

###### pH

Other parameters not listed may be of significance in on-shore facilities employing production processes covered by established effluent guidelines. These parameters will be included by application of the individual treatment standards and monitoring requirements developed for the appropriate industrial category. For example, if a shipbuilding facility included a discharge from a metal plating operation, guidelines for the metal plating industry would be applied. In addition, compliance with established federal, state, and local regulations for the treatment, pretreatment, and monitoring of other wastes (such as sewage and cooling water) will be required.

##### Basis for Selection

###### Solids

Much of the pollutorial material emanating from shipyards, especially repair facilities, is in the form of solids. Blasting abrasives, dry paint and primer, and marine fouling organisms form the bulk of these solids, which may be either suspended or settleable.

## Metals

Materials containing heavy metals are used extensively on ships and in shipyards to inhibit fouling and boring marine organisms and to inhibit corrosion. Red lead and zinc chromate are widely used primers. Antifouling paints depend on the toxicity of heavy metals for their effectiveness; copper, tin, mercury, and arsenic may constitute a significant portion of antifouling paints. When ship hulls are refinished old antifouling paints and primers are removed, and some of this material may enter the water either as solids or dissolved pollutants. Arsenic compounds are applied to wooden structures to inhibit marine boring organisms, and, industrial grade zinc commonly contains cadmium. All of these pollutants may enter waterways from shipyards in quantities damaging to the marine environment.

## Oil and Grease

Bilges, ballast and fuel tanks, engines, and metal fabricating operations (such as rolling mills) are potentially significant sources of oil and grease in shipyards.

## Flow

To assess the quantities of pollutional materials in liquid discharges, it will be necessary to quantify the volumes of water discharged.

## pH

To protect aquatic life, the pH of wastewaters from shipyards should be between 6 and 9 standard units.

## Monitoring Requirements

### Repair Facilities

Graving docks - to determine the quantity of wastes discharged, water samples will be collected monthly during flooding and dewatering of graving docks for undocking. Samples will consist of composites of grab samples collected at 15-minute intervals during flooding and dewatering periods sufficient to characterize the wastes. During the flooding process, samples will be collected from the flooding ports. During the dewatering process, samples will be collected from the discharge ports (if not submerged) or from the dewatering pumps. The volumes of flow, and parameter concentrations will be reported for both the flooding and dewatering process in order that net pollutant loads can be ascertained. Samples will be analyzed for suspended and settleable solids, particulate and dissolved metals, oil and grease, and pH. Total volume of water flooded and discharged will be calculated for each undocking and will be reported.

Once per month, samples will be collected of drainage wastewaters (relief water, gate leakage, shipboard wastes, wash water, precipitation, etc.) discharged from graving dock sumps. During a 24-hour period when conditions of greatest pollution potential exist (when hulls are being sandblasted or painted and during periods of heavy rainfall if they occur), a sample will be collected from each drainage. The pH of each of these samples will be measured, and a sample will be analyzed for oil and grease content. These grab samples will then be composited and analyzed for suspended and settleable solids, and particulate and dissolved metals. The volume of water discharged from the sump pump during the 24-hour period, and the total volume discharged during the month, will be reported.

If sanitary wastes are collected and discharged to publicly owned facilities, established pretreatment and monitoring requirements will be met. If treated sanitary wastes are discharged to the receiving water, monitoring conditions imposed in the effluent guidelines for secondary sewage treatment facilities will be required.

Floating Dry Docks, Marine Railways and Other Ship Repair Facilities - Because the control of process wastes from dry docks, marine railways and other repair facilities will require the diligent application of efficient housekeeping procedures, monitoring will consist of surveillance. To assure that the WATER POLLUTION CONTROL PLAN for the facility is followed strictly, frequent unannounced verification inspections will be conducted by the permit issuing agency. Further, it will be a condition of all permits issued to ship repair facilities that a responsible company official certify monthly that all conditions of the WATER POLLUTION CONTROL PLAN have been applied without material deviation.

#### Shipbuilding Facilities

Those facilities with graving docks or partially submerged shipways will be required to monitor flooding, dewatering, and sump discharges twice annually in the manner required at facilities used for ship repair. Monitoring of shipway drainage discharges shall be conducted during periods of greatest pollutional potential (i.e., when hulls are primed or painted and during periods of heavy rainfall if they occur). Parameters to be measured and sampling schedule during a 24-hour period shall be as required for graving dock drainage discharges.

#### Compliance Schedule

The permits to be issued under this guidance will cover repair facilities and graving dock or shipway portions of shipbuilding facilities. Other portions of shipbuilding facilities should be covered by other guidance or final or proposed effluent guidelines.

Ship repair facilities and construction facilities with graving docks or shipways will be required to submit a WATER POLLUTION CONTROL PLAN to the permit-issuing agency. The plan must give consideration to all of the factors discussed in the rationale section of this document, emphasizing ways in which wastewaters may be segregated and spent abrasive, old paint and primer, and other solids may be removed from the facility. It is anticipated that the plan can be submitted within three months after the date of permit issuance and implemented (segregation of wastewaters and instigation of housekeeping procedures) within six months of the date of permit issuance.

Control of sanitary wastes will require inclusion in the above PLAN, in that interim disposal methods must be devised to prevent the discharge of sanitary wastes to dock surfaces. In addition, all sanitary wastes ultimately must receive secondary treatment. At shipyards that do not presently have on-shore facilities for sanitary waste treatment or transport of wastes to such facilities, secondary treatment will be achieved by June 30, 1977, with submission of construction schedules within six months after the date of permit issuance and submission of progress reports at six-month intervals until implementation of secondary treatment or pretreatment. Shipyards with existing facilities will be required to meet more stringent schedules and achieve implementation at earlier dates.

Monitoring of discharges from shipyards will commence immediately after issuance of the permit. Monitoring data will be submitted twice annually to the permit-issuing agency. Monthly certification of compliance with the PLAN will be retained by the permittee, with copies submitted twice annually to the issuing agency, however, material deviation from the PLAN will be reported to the permit-issuing agency immediately.

#### APPLICATION OF RATIONALE TO NPDES PERMIT ISSUANCE

The control of process wastes from the flooding and dewatering phases of graving docks and shipways, and from floating dry docks, marine railways, and other repair facilities depends on segregation of wastewaters and collection and disposal of spent abrasive and other solid materials. As an NPDES permit condition, the permittee will be required to submit within three months after time of permit issuance a detailed WATER POLLUTION CONTROL PLAN to the permit-issuing agency and to initiate commitments within the plan within six months after permit issuance. Such plan must give detailed consideration to all appropriate factors discussed in the Rationale section of this document, emphasizing specific methods by which wastewaters will be segregated and waste solids will be collected and removed. Compliance monitoring will consist of surveillance; that is, frequent unannounced inspections which will be conducted by representatives of the permit-issuing agency. In addition, a responsible company official will certify compliance with all conditions of the plan on a monthly basis. Failure to comply with all conditions of the WATER POLLUTION CONTROL PLAN will be considered a violation of the permit, requiring evaluation for potential enforcement action. \*

Self-monitoring, as detailed in the Compliance Determination section of this document, of graving dock and shipway drainage discharges will require sampling (monthly at repair facilities, twice annually at ship-building facilities) of wastewater discharges. Monitoring will commence immediately after issuance of the permit and will continue until the expiration date of the permit. Self-monitoring data in conjunction with compliance monitoring inspections will be used to determine compliance with the plan and with other conditions of the permit.

Treatment and monitoring of waste discharges covered in established effluent guidelines (such as those for cooling water discharges, etc.) must conform to the requirements of the appropriate waste category. In addition, compliance with established federal, state, and local regulations for treatment, pretreatment, and monitoring will be required.

Initial permits will not contain specific effluent limitations. However, if monitoring data indicate that such limitations are warranted, the permits may be modified to include limitations.

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## COATINGS, MARINE

R.W. Drisko

Ships, offshore working platforms, and onshore waterfront structures are damaged by contact with the harsh marine environment. This damage results in shutdown of operations, dry-docking of vessels, and costly repairs (see Corrosion). Control of this destructive action is best achieved through a program of (1) selection of the materials most resistant to deterioration, (2) design to minimize conditions favorable to corrosion, and (3) effective utilization of protective coatings and/or cathodic protection (an electrical method of preventing metal corrosion in a conductive medium by placing a charge on the item to be protected) to deter corrosion. Protective (anticorrosive) coatings impart protection to the substrate by forming a barrier to the water, salt, and oxygen which accelerate corrosion. Thus, the thickness, impermeability, and integrity of a film of coating are of prime importance in its ability to provide corrosion control. Although protection of steel is of top priority, appearance of the coating may also be important. Therefore, naval vessels are given a color to provide camouflage and coatings on fixed offshore structures should provide optimum visual detection.

The attachment and growth of marine fouling organisms (mostly barnacles,

tunicates, hydroids, marine plants, and bryozoa) to ship bottoms are also economically important. (1). Larval forms attach themselves to nonmoving surfaces and may grow quite rapidly, especially in warm waters. Ship-drag caused by fouling can result in reduced speed, limited maneuverability, and increased fuel consumption. Fixed structures may undergo increased drag, reduced freeboard, clogging of seawater intake lines, or coating damage as a result of marine fouling. Currently, the one proven method employed in the prevention of marine fouling is the use of biocidal chemicals in special antifouling paints; these chemicals are gradually released into the seawater at the paint surface to provide continuous fouling control. Thus, two types of coating are described: protective (anticorrosive) coatings for corrosion control, and antifouling paints for controlling the attachment and growth of marine fouling organisms.

### Coating Composition

Some of the first steel ships were coated with a product made by blending red lead, turpentine, and vegetable or fish oils. The modern synthetic coatings differ greatly from these, but still have the same three common ingredients:

**Solvent:** An organic liquid that dissolves the binder and thins the product to brushing, rolling, or spraying consistency. The solvent, which is lost by evaporation, does not remain in the cured film.

**Binder:** An organic film-forming solid or liquid that converts to a continuous solid film upon curing. The chemical nature of the binder determines the generic type of the coating.

**Pigment:** A solid material that imparts color, opacity (thus protecting the organic binder from deterioration by sunlight), and in some cases (eg, red lead and zinc chromate) corrosion inhibition (see Pigments; Corrosion).

The first marine coatings were cured by air oxidation of drying oils to a solid film after the solvent had evaporated (see Driers). This process was slow and the protection was of limited duration. Modification of such oleoresinous coatings into alkyds made them more durable and faster drying. Alkyd coatings are not suited for damp or immersed environments since they are not stable in aqueous environments, however, they are still used frequently on shipboard compartments, decks, and vertical surfaces above the water and splash zones. Silicone-modified alkyds have improved durability and gloss retention and are, therefore, used on exterior marine atmospheric areas (see Alkyd resins; Silicon compounds).

Coatings used later were lacquers that, upon solvent evaporation, deposited a continuous film of pigmented solid binder. They were easy to touch up and repair since the cured film could be softened by the solvent used in the touch-up topcoat, thereby resulting in an excellent intercoat bonding. Lacquers provided much greater durability than the alkyd paints and could be used in areas that received continuous immersion in seawater. Vinyls and chlorinated rubbers are two lacquers that find considerable marine use today. Relatively inexpensive coal tar coatings find occasional marine use on mechanically cleaned surfaces although their relatively soft films can be penetrated by barnacles unless fouling-resistant biocides are added.

Latex coatings are somewhat similar to lacquers in that the dispersed binder particles coalesce during the evaporation of the water solvent to form a film (see Latex technology). Acrylic and vinyl-acrylic latexes find limited use on offshore platforms, but may find more use if environmental and safety regulations greatly restrict the

amounts of greatly reduced to the product

Coating; widely used urethanes, and When proper marine environment

### Surface Preparation

To be successful preparation the incomplete in a severe marine coating and surface time-honored is no longer (or shot) blast that requires (2-4) have been coating; that used in the U of coatings with length of process of surface preparation. The relative demanding for coatings compared blast cleaning factors of indicate that correct preparation must be met in full.

Recently been cited by other fine solid applicators to sharp, and proper emission of paint and (3) using being blasted. Several different investigated. tion).

amounts of organic solvents used in coatings. All organic solvents in paints may be greatly reduced in the near future since it is currently thought that they contribute to the production of photochemical smog.

Coatings that cure by chemical reaction of two component parts are the most widely used in submerged marine applications. For example, epoxies, coal tar-epoxies, urethanes, and polyesters are durable and resistant to water, solvent, and chemicals. When properly formulated they can provide excellent protection to steel in severe marine environments.

### Surface Preparation Requirements

To be successfully applied, the first marine coatings required only minimum preparation of steel surfaces because the vegetable or fish oils in the coatings wetted the incompletely cleaned surfaces well enough to provide adequate bonding. However, in a severe marine environment their service lives were limited. Modern synthetic marine coatings provide much longer protection, but require both complete cleanliness and surface profile (tooth) in order to obtain adequate bonding of prime coats. The time-honored tradition of chipping and wire brushing deteriorated coatings from ships is no longer used. This method has been replaced by high-speed abrasive (sand, grit, or shot) blasting by conventional air-pressured equipment or by newer equipment that requires centrifugal force to propel the abrasive (see Abrasives). Several standards (2-4) have been established to determine if a steel surface is properly prepared for coating; that of the Steel Structures Painting Council (SSPC) (2) is most frequently used in the United States. The necessary level of surface preparation for tight bonding of coatings varies with the generic type, the severity of the environment, and the desired length of protection. Manufacturers of similar coatings do not agree on a single level of surface preparation for their products, some being much more cautious than others. The relatively new and widely used inorganic zinc coatings are probably the most demanding for optimum preparation of steel surfaces. Thus, the suppliers of these coatings commonly recommend white-metal blast cleaning (SSPC No. 5) or near-white blast cleaning (SSPC No. 10) when they are used in a marine environment. Manufacturers of vinyls, chlorinated rubbers, epoxies, coal tar-epoxies, and urethanes indicate that commercial blast cleaning (SSPC No. 6) is usually satisfactory. The surface preparation requirements stated by the coating manufacturer or specification should be met in full.

Recently, several shipyards and other steel construction and repair facilities have been cited by local air pollution control agencies for emitting particulates (dust and other fine solids) into the air during abrasive blasting of steel. Actions taken by coating applicators to eliminate such plumes from the atmosphere include: (1) the use of hard, sharp, and properly sized abrasives that produce an adequate surface with minimum emission of particulates, (2) blasting inside a building or under a temporary shroud, and (3) using equipment that automatically moves across a regular surface (the area being blasted can be completely enclosed) and picks up and recycles the spent abrasive. Several different systems that use water to keep dust at a minimum are currently being investigated. Also, powdered dry ice is being studied as an abrasive (see Air pollution).

**Application of Marine Coatings.** Modern synthetic coatings have strict application requirements (5-6). Multipackage systems must be mixed and thinned in exactly the proportions specified by the manufacturer. Specified times between mixing and application (induction times), times between multiple coats, and pot-life limitations must all be met. Spraying, particularly airless spraying, is the fastest and most commonly used method for applying the coating (see Coating processes). This usually results in a very pleasing appearance. Before spraying it is good practice to round or smooth all welds, sharp edges, and corners, and to fill crevices and other structural features that are difficult to coat and that are susceptible to accelerated corrosion. After these areas are cleaned, a primer coat should be brushed into them before a full prime coat is sprayed on the overall area.

On offshore platforms or waterfront structures, periodic wire brushing and touch-up painting of areas with localized coating damage may be a more effective way to achieve continuous protection from corrosion. For wire-brushed surfaces it is best to use cheaper oleoresinous, alkyd, or coal tar coatings that are more tolerant of this method of surface preparation. For repair of localized coating damage all loose paint, rust, and other contaminants must first be removed. The same types of prime, intermediate, and topcoat are then normally applied to the cleaned steel and overlapped onto the surrounding coating.

For optimum performance in immersion service, all marine coatings should have a minimum dry film thickness of 250  $\mu\text{m}$  (200  $\mu\text{m}$  may be effective for epoxies) which is best achieved in at least three coating applications. Different pigmentation in each coat will avoid overlapping holidays (discontinuities) in the total system. Dry film thicknesses are usually determined with magnetic gages, and holidays are detected with low-voltage holiday detectors.

Manufacturers of marine coatings always have printed information available on use of their products. This information includes recommendations on the equipment used, mixing of components, time and temperature requirements, coverage rate at a recommended dry film thickness, and good application practices. New application equipment used in mixing the two components at the gun head and/or utilizing heat may be necessary if limitations on the amounts of organic solvents that can be used in marine coatings result in viscous products that cannot be sprayed with presently used equipment.

### Protective (Anticorrosive) Coatings

The more durable and commonly used types of marine protective coatings are discussed separately here. There are specific recommendations for coatings applied to ships (5-7), offshore fixed platforms (8), fleet moorings (9), and waterfront structures (10). Table 1 indicates the zones (atmospheric, splash, or immersed) for which suppliers recommend their marine coatings.

**Vinyls.** The first marine vinyl coatings had a very low build rate (25-50  $\mu\text{m}$  per coat) and required many coats to achieve a 250- $\mu\text{m}$  dry film thickness. Later formulations have a much higher rate of film-build (100  $\mu\text{m}$  or more per coat). Since vinyls are lacquers they are readily touched up or recoated after weathering. The organic solvents in vinyls may become a deterrent to their use if air quality standards become more restrictive (see Vinyl polymers).

Table 1. Sources

Name of supplier	Atmospheric	Splash	Immersed
Advanced			
Ameron			
Carbo-line			
Cook			
Devoe			
Farboil			
Koppers			
Porter			
Pro-Line			
Reliance			
Rustoleum			
Wisconsin			

\* Recommendation

Chlorine has increased  $\mu\text{m}$  or more application may prove tadiene; R

Epoxies much use (MIL-P-244 and can be potable water preparation work. Amin surface of a unless rem a surface coat system by the man cured final of the top in sunlight an addition removed by are applied. formulation

Table 1. Sources of Marine Protective Coatings

Name of supplier	Alkyd	Silicone alkyd	Vinyl	Chlorinated rubber	Coal tar	Acrylic or vinyl acrylic	Epoxy	Coal tar epoxy	Urethane	Polyester	Zinc inorganic	Zinc rich epoxy	Zinc rich chlorinated rubber
Advanced							abc <sup>a</sup>		abc	abc	abc	abc	
Ameron	a	a	abc	abc			abc	abc	ab		abc	ab	
Carbo-line	ab	a	abc	abc	bc		bc	bc	a	bc	abc	abc	
Cook	a	a	abc	ab		a	abc	abc	a	abc	abc	abc	ab
Devoe	a	a	abc	abc		ab	abc	abc	abc		ab	ab	
Farboil	a	a	abc	abc			abc	c	a	a	abc	abc	abc
Koppers	a	a			c		abc	abc	abc		abc		
Porter	a	a	abc	ab	bc		abc	abc	ab	ab	abc	abc	
Pro-Line	a	a	abc	ab	abc	ab	abc	abc	ab	abc	ab	ab	ab
Reliance	a	a	ab	abc		a	abc	bc	ab		abc	ab	
Rustoleum	a	a	ab				ab	ab				ab	
Wisconsin							abc	abc	a	bc	a	a	

<sup>a</sup> Recommended for use in: a = atmospheric zone; b = splash zone; or c = immersed zone.

**Chlorinated Rubbers.** The use of chlorinated rubber coatings on marine structures has increased markedly in the last few years. They have a fairly high build rate (75  $\mu\text{m}$  or more) and, like vinyls, are easily repaired. They also have good low temperature application and curing properties. However, they utilize strong organic solvents which may prove to be a deterrent to their use (see Elastomers, synthetic—neoprene; Butadiene; Rubber).

**Epoxyes.** Two-component epoxyes, notably the polyamide-cured epoxyes, find much use on steel marine structures (see Epoxy resins). One such formulation (MIL-P-24441) is unique in that it is somewhat tolerant of incompletely cleaned steel and can be used on almost all shipboard steel surfaces (7), including the interiors of potable water tanks. Polyamide-cured epoxyes require less stringent steel surface preparation than the amine-cured epoxyes which are less commonly used for marine work. Amine-cured epoxyes may have bloom or sweat of the amine catalyst to the surface of applied films before curing. This may hinder adequate bonding of topcoats unless removed by solvent after curing. Epoxyes cure to a hard finish that presents a surface with no tooth and is, therefore, difficult to topcoat. As a result, in multiple coat systems topcoats are applied before the undercoat completely cures (as specified by the manufacturer). Similarly, antifouling paints must be applied to the incompletely cured final epoxy coat. To topcoat completely cured epoxyes, a fog coat (thinned coat of the topcoat) is first applied before a full topcoat is sprayed. Epoxyes chalk freely in sunlight. Although this does not affect the protection of the steel, it does present an additional topcoating problem for weathered epoxy coatings. The chalk must be removed by sweep abrasive blasting or light sanding before a fog coat and a full topcoat are applied. The low temperature application limit of epoxyes varies greatly with the formulation.

**Coal Tar-Epoxy.** Polyamide-cured coal tar epoxies, such as SSPC No. 16, are also widely used on marine structures because they are especially impermeable to water. A coal tar-epoxy catalyzed with a low molecular weight amine is especially resistant to an alkaline environment, such as occurs on cathodically protected surfaces. Some coal tar-epoxies become brittle in direct sunlight, but others with aluminum pigmentation or other special variations are less susceptible to this deterioration. Coal tar-epoxies have topcoating problems similar to those of epoxies, and they are generally more difficult to topcoat than epoxies. Also, they are available only in black or a slight variation of black (see also Coal, carbonization).

**Urethanes.** Two-component (polyester, polyether, or acrylic-curing) urethanes give a tough, durable, smooth finish that presents topcoating problems similar to those of epoxies. The first marine urethane coatings chalked and yellowed rapidly in sunlight. This is not true of the newer aliphatic urethanes (11) which have excellent weathering properties, abrasion resistance, and good low temperature application and curing characteristics. Because of their outstanding weathering characteristics, they are frequently used over epoxy primers, particularly in areas exposed to direct sunlight (see Urethane polymers).

**Polyesters.** Polyester coatings for marine use are most frequently used with fiberglass reinforcement to impart strength and rigidity. Fiberglass-reinforced polyester construction can be used to produce strong, but lightweight boats, buoys, and surfboards. Epoxy and urethane coatings can also be applied to fiberglass. On steel ships and fixed marine structures, glass fibers or flakes in a high-build polyester coating produce a tough, durable, abrasion-resistant surface (see Laminated and reinforced plastics; Polyesters).

**Inorganic Zincs.** Marine inorganic zinc coatings are available in different packaged forms and in formulations that cure by different mechanisms (12). The two-package, self-curing, solvent-thinned products (alkyl silicates) are probably the most widely used (see Silicon compounds). In all cases, a well-formulated zinc inorganic coating of 75–125  $\mu\text{m}$  dry film thickness can provide excellent long-lasting abrasion and corrosion resistance to steel in a mild atmospheric environment even when not topcoated. Therefore, they are commonly used as preconstruction primers for steel plate in an automated shop system (centrifugal abrasive blasting and spray priming of steel). After the steel has been fabricated into a finished product in the field, localized areas of damaged coating are cleaned (preferably by abrasive blasting) and spot primed with an inorganic zinc coating before one or more topcoats are applied. Inorganic zincs deter corrosion through a form of sacrificial cathodic protection in which the zinc in the coating is corroded rather than the steel substrate. In seawater, the loss of zinc is too rapid for long-lasting protection of the steel. Therefore, zinc coatings are almost always topcoated for marine use even when not immersed. Vinyls, epoxies, and urethanes (polyether- or acrylic-curing, not polyester-curing), are commonly used as topcoats. Alkyds and other coatings that are not stable to an alkaline environment should not be used as topcoats.

**Zinc-Rich Organics.** Many zinc-rich organic coatings, notably zinc-rich polyamide-cured epoxies, are available for marine use. They do not have the same abrasion resistance as some of the inorganic zincs, but they can tolerate a lower level of surface

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preparation and are more easily topcoated. Again, the high zinc content provides a form of cathodic protection to the steel.

**Specialized Coatings.** Several protective coatings, mostly solvent-free epoxies, are marketed for application underwater to steel surfaces (13). Some are so viscous (like putty) that they must be hand-applied by divers; other thinner products can be applied underwater by brush or rollers. These coatings are most frequently used to repair localized areas of coating damage.

Powder coatings (qv) (14) are strong, abrasion-resistant, insulating, durable, protective coatings that are applied to metal components of different sizes and configurations at shops where optimum surface preparation and application conditions are possible. They can give outstanding protection to pumps, valves, and other critical components of operational systems where abrasion, wear, chemical or solvent attack, or rapid corrosion presents a serious problem.

Plastic-coated steel electrical conduits and fittings that perform well in a marine atmospheric environment are available under military specification MIL-C-29169.

Petrolatum-coated tapes (15) find many uses on ships, waterfront structures, and offshore platforms. They are readily applied over wirebrushed steel and can, therefore, be used on difficult to clean and coat structures such as piping. The petrolatum paste can provide protection to wire ropes and cables in marine atmospheric environments. Protection of the steel is provided by a thick insulation that separates it from the hostile environment.

#### Antifouling Paints

Many methods for preventing marine fouling or for removing it from ships have been proposed (1). Currently, diver-operated or remotely controlled equipment that utilizes rotating brushes or water jets is being used to remove fouling growth from ships (16). Their economic and practical effectiveness in a scheduled fouling removal program has not been proven to date.

Many different biocides have been tested in paints as deterrents to marine fouling (see Industrial antimicrobial agents). Most have not imparted long-lasting properties; others are not being used because of health, safety, or environmental hazards. The latter include organic mercury, lead, and arsenic compounds. Currently, the only two biocidal materials that are used extensively in antifouling paints are cuprous oxide and organotin compounds (usually tributyltin oxide or tributyltin fluoride) (17). On steel surfaces it is always necessary to apply an insulating protective coating between the steel and a cuprous oxide-containing antifouling paint to avoid rapid galvanic (dissimilar metal) corrosion of the steel. Aluminum is even more chemically active than steel so that cuprous oxide-containing antifouling paints are never used on it; however, the organotin-containing antifouling paints can be used safely on aluminum. (Similarly, a red lead-containing primer is never used on aluminum surfaces.) Although organotin-containing antifouling paints present no galvanic corrosion problems, special precautions must be taken while spraying and handling them because of health and environmental hazards. Many manufacturers are marketing antifouling paints containing both cuprous oxide and organotin to obtain a broader spectrum of fouling control (see Tin compounds).

Table 2. Sources of Antifouling Paints and Generic Type of Paint Binders

Name of supplier	Vinyl	Epoxy	Hydrocarbon	Chlorinated rubber	Urethane	Coal tar-epoxy	Alkyd	Oil	Resin tar
Advanced	c,o <sup>a</sup>	c,o			c,o				
Ameron	o		c	o					
Carboline	c,o								c
Devoe	c,o	m	c,m						
Farboil		o	c	o			c		
Koppers	c,o,m							c	
Porter				o		o			
Pro-Line	c,o,*	o				o			m
Reliance	c								
Wisconsin		o							

<sup>a</sup> Note that c = cuprous oxide biocide; o = organotin biocide; m = mixed biocides; and \* = markets water-based as well as solvent vinyl product.

Most commercial antifouling paints use a vinyl binder, although products with other binders are also marketed (see Table 2). Rosin or some other leaching agent must be added to cuprous oxide formulations to permit its controlled release into seawater where it is lethal to fouling larva forms. Organotins usually do not require leaching agents to dissolve slowly in seawater.

Recent research has lead to the development of organometallic polymers for use in antifouling paints (18). Controlled release of organometallic biocide by dissociation from the polymer in seawater may extend the normal 2-3-yr period of fouling resistance to as long as 5 years. Another recent development (19-20) is the formulation of antifouling paints that can be applied underwater. Research continues to be conducted into safer biocides that are effective in fouling control, nontoxic fouling repellents, and low surface energy (slippery) coatings that will not permit the attachment of fouling organisms.

A sheet material (ca 2 mm thick) of black neoprene rubber (see Elastomers, synthetic, neoprene) impregnated with tributyltin is currently marketed (21-22) for bonding with adhesive to structures placed in seawater. Because the sheet is so much thicker than an antifouling coating system (usually about 100  $\mu$ m) it has a larger reservoir of biocide that can result in longer lasting fouling control.

Table 3. Sources of Underwater-Applicable Coatings

Name of firm	Method of application	
	Hand or glove	Brush or roller
Advanced	yes	yes
Koppers	yes	no
Pro-Line	yes	no
Sta-Crete	yes	no
Sika	yes	no

Table 4. Ac

## Supplier

Advanced C

Ameron Co

Carboline C

Cook Paint

Devoe and F

Farboil Pair

Hempel's M

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Koppers Ch

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TLV standard for inorganic tin compounds is two milligrams of inorganic tin compounds as tin per cubic meter of air averaged over an eight-hour work shift (61).

### Organotin Compounds

In an organotin compound, there is at least one tin-carbon bond. The oxidation state of tin in most organotin compounds is +4, although organotin compounds with bulky groups bonded to divalent tin have been reported (88). Five classes of organotin compounds are known:  $R_4Sn$  (tetraorganotins),  $R_3SnX$  (triorganotins),  $R_2SnX_2$  (diorganotins),  $RSnX_3$  (monoorganotins), and  $R_6Sn_2$  (hexaorganoditins) (see Organometallics). Of commercial importance are those organotins where R is methyl, butyl, octyl, cyclohexyl, phenyl, or  $\beta,\beta$ -dimethylphenethyl (neophyl). The noncarbon-bonded anionic group is commonly halide, oxide, hydroxide, carboxylate or mercaptide.

It was not until the 1940s that the commercial potential of organotins was realized. Organotins first were used as stabilizers for poly(vinyl chloride), which is normally processed just below its decomposition temperature (see Heat stabilizers). The high biocidal activity of the triorganotins is one of the most applied areas of their usefulness. In addition, organotins are widely used as catalysts and curing agents and in the treatment of glass. A number of organotin subjects, including structural organotin chemistry and industrial applications, are discussed in refs. 89-93.

**Properties.** As a member of Group IVA of the periodic table, tin has four valence electrons available for bonding. In its usual tetravalent state, tin assumes a typical  $sp^3$  hybridization and the configuration of its covalent bonds is tetrahedral. In the tin atom,  $d$  orbitals are available and are utilized in the formation of pentacoordinate and hexacoordinate complexes by Lewis bases with organotin halides. These complexes are frequently trigonal bipyramidal or octahedral. Tin forms predominately covalent bonds to other elements, but these bonds exhibit a high degree of ionic character, with tin usually acting as the electropositive member.

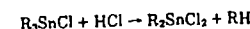
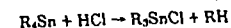
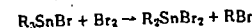
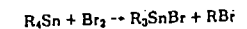
Although the mean dissociation energy of tin-carbon bonds is less than that normally associated with carbon-carbon bonds ( $\bar{D}_{Sn-C} \approx 188-230$  kJ/mol (45-55 kcal/mol),  $\bar{D}_{C-C} = 335-380$  kJ/mol (80-90 kcal/mol) (90)), the difference is not great enough to render the tin-carbon bond very reactive. The bond is stable to water and atmospheric oxygen at normal temperatures. The tin-carbon bond is also quite stable to heat and many organotins can be distilled under reduced pressure with little decomposition. Strong acids, halogens, and other electrophilic reagents readily cleave the tin-carbon bond, although other reactions that are common with other organometallics, eg, Grignard and organolithium reagents, do not occur with organotins. For example, the tin-carbon bond does not add to the carbonyl group, nor does it react with alcohols.

The ionicity of organotins leads to dissimilar chemical properties. For example, triorganotin hydroxides behave not as alcohols, but more like inorganic bases, although strong bases remove the proton in certain triorganotin hydroxides since tin is amphoteric. The bis(triorganotin) oxides,  $(R_3Sn)_2O$ , are strong bases and react with inorganic and organic acids forming normal saltlike but nonconducting and water-insoluble compounds. They do not in the least resemble organic ethers, though they can occasionally form peroxides. Tin doubly bonded to oxygen, which is analogous to an organic ketone, does not exist and diorganotin oxides,  $R_2SnO$ , are polymers, ie,

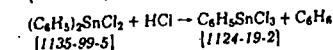
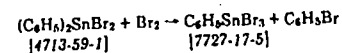
$\{Sn(R_2)O\}_n$ , and usually are highly cross-linked via intermolecular tin-oxygen bonds. Unlike the halocarbons, organotin halides are reactive compounds and, because of their ionic character, readily enter into metathetical substitution reactions resembling the inorganic metal halides. Tin-hydrogen bonds are unlike carbon-hydrogen bonds and, although essentially covalent, their partial ionicity makes them true hydrides with hydrogen as the formal electronegative partner. Organotin hydrides are strong reducing agents and are similar to lithium aluminum hydride. Many are organic-soluble and easily distilled and are used increasingly in organic syntheses. Unlike carbon, tin shows much less tendency to catenate, ie, form chains of Sn atoms bonded to each other. Although tin-tin-bonded compounds are known (see Hexaorganoditins), the tin-tin bond is easily cleaved by oxygen, halogens, and acids.

**Tetraorganotins. Physical Properties.** Physical properties of typical tetraorganotin compounds are shown in Table 5. All tetraorganotin compounds are insoluble in water but are soluble in many organic solvents.

**Chemical Properties.** The most important reactions which tetraorganotins undergo are heterolytic, ie, electrophilic and nucleophilic, cleavage and Kocheshkov redistribution (96-99). The tin-carbon bond in tetraorganotins is easily cleaved by halogens, hydrogen halides, and mineral acids:



With tetraaryltin compounds, the reaction can proceed further to the aryltin trihalides:



In practice, these cleavage reactions are difficult to control, and usually mixtures of

Table 5. Physical Properties of Typical Tetraorganotin Compounds<sup>a</sup>

Compound	CAS Registry No.	Mp, °C	Bp, °C	$n_D^{20}$	$d_4^{20}$ , g/cm <sup>3</sup>
$(CH_3)_4Sn$	[594-27-4]	-54	78	1.4415	1.2905 <sup>b</sup>
$(C_4H_9)_4Sn$	[1461-25-2]	-97	127.13 kPa <sup>c</sup>	1.4727	1.0541
$(C_6H_{11})_4Sn$	[3590-84-9]			1.4677 <sup>d</sup>	0.9609 <sup>d</sup>
$(C_6H_5)_4Sn$	[595-90-4]	228			1.521
$(C_6H_{11})_4Sn$	[1449-55-4]	261	160-163		
$(CH_2=CH)_4Sn$	[1112-56-7]		70.89 kPa <sup>c</sup>	1.4914 <sup>b</sup>	1.257
$(CH_3)_2(C_4H_9)_2Sn$	[1528-00-3]		73-75.5 kPa <sup>c</sup>	1.4640 <sup>b</sup>	1.124 <sup>b</sup>
$(C_2H_5)_3(C_4H_9)Sn$	[17582-53-5]			1.4736	1.1457

<sup>a</sup> Ref. 94, except where noted.

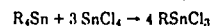
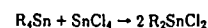
<sup>b</sup> At 25°C.

<sup>c</sup> To convert kPa to mm Hg, multiply by 7.5.

<sup>d</sup> Ref. 95.

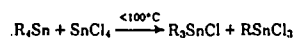
products form, even with stoichiometric quantities of reagents. Selectivity improves at lower temperatures, higher dilutions, and in the presence of polar solvents, eg, pyridine. This method is not used to prepare the lower alkylated-arylated organotins outside the laboratory.

The most widely utilized reaction of tetraorganotins is the Kocheshkov redistribution reaction, by which the tri-, di-, and in some cases the monoorganotin halides can be readily prepared:



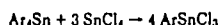
These reactions proceed rapidly and in good yield with primary alkyl and phenyl organotin compounds at ca 200°C. The reactions proceed at lower temperatures if anhydrous aluminum chloride is used as a catalyst.

If the reaction temperature is controlled through the use of a low boiling solvent or other means, it is possible to isolate equimolar quantities of monoalkyltin trichloride and trialkyltin chloride using a 1:1 ratio of tetraorganotin and tin tetrachloride:

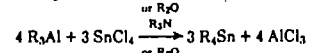
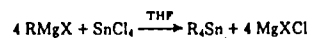


When R is a lower alkyl, the organotin trichloride can be easily separated from the reaction mixture by extraction with dilute aqueous hydrochloric acid, in which it is soluble. This reaction also works well with unsymmetrical tetraorganotins and has been practiced commercially (100).

With tetraaryltins, the redistribution reaction can be made to proceed to the monoorganotin stage with the proper stoichiometry of reactants:

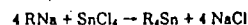
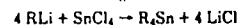


**Preparation.** The tetraorganotins, although of little commercial utility by themselves, are important compounds since they are the starting materials for many of the industrially important mono-, di-, and triorganotins. Among the most widely used preparations of tetraalkyl- and tetraaryl tin compounds is the reaction of stannic chloride with tetrahydrofuran-based Grignard reagents or organoaluminum compounds:



Excess alkylating reagent is required if the tetraorganotin is desired as the exclusive product. In commercial practice, the stoichiometry is kept at or below 4:1, since the crude product is usually redistributed to lower organotin chlorides in a subsequent step and an ether is used as the solvent (101). The use of diethyl ether in the Grignard reaction has been generally replaced with tetrahydrofuran.

Organolithium and organosodium reagents can also be used to prepare tetraorganotins:

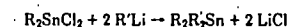
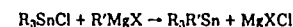
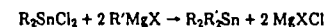
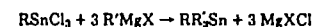


The Wurtz reaction, which relies on *in situ* formation of an active organosodium species, is also useful for preparing tetraorganotin compounds and is practiced commercially. Yields are usually only fair and a variety of by-products, including ditins, also form:

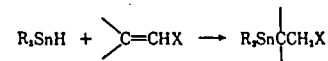


A variant of the Wurtz reaction is the preparation of tetrabutyltin from activated magnesium chips, butyl chloride, and stannic chloride in a hydrocarbon mixture. Only a small amount of tetrahydrofuran is required for the reaction to proceed in high yield (101).

The use limitations of an active metal organometallic, eg, Grignard or organolithium reagents, allow preparation of only tetraorganotins, which have no functional groups reactive to the organometallic reagent on the molecule. The preparation of tetraorganotins with functional groups, eg, hydroxyl, amino, nitrile, etc, bonded to the organic group requires special measures, eg, blocking the functional group with an inert function then deblocking, usually mildly, after the formation of the tin-carbon bonds. The nitrile derivative, tetrakis(cyanoethyl)tin [15961-16-7], is prepared in good yield via a unique electrochemical reaction of tin metal with acrylonitrile (102). Unsymmetrical tetraorganotins can be prepared from the mono-, di-, or triorganotin halides and the appropriate organometallic reagent of magnesium, lithium, sodium, or aluminum:



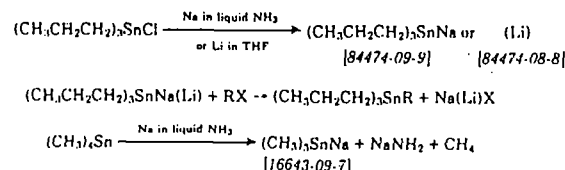
Unsymmetrical functional tetraorganotins are generally prepared by tin hydride addition (hydrostannation) to functional unsaturated organic compounds (103) (see also Hydroboration). The realization that organotin hydrides readily add to aliphatic carbon-carbon double and triple bonds forming tin-carbon bonds led to a synthetic method which does not rely on reactive organometallic reagents for tin-carbon bond formation and, thus, allows the synthesis of organofunctional tetraorganotins containing a wide variety of functional groups. Typical compounds which undergo such a reaction include tributyltin hydride and triphenyltin hydride, which can be prepared by the reaction of the chlorides with lithium aluminum hydride or sodium borohydride (104-105). Representative organic substrates include acrylonitrile, acrylate and methacrylate esters, allyl alcohol, vinyl ethers, styrene, and other olefins:



Compounds with active halogens, eg, allyl chloride, also undergo reduction. Diorganotin dihydrides, monoorganotin trihydrides, and even stannane [2406-52-2],  $SnH_4$ , undergo analogous reactions, but the stability of the organotin hydrides decreases with increasing number of hydride groups, so these hydrostannation reactions generally proceed in poorer yield with more by-products.

Other methods for preparing tetraorganotin compounds include the use of diorganotin compounds, halomethyltin halides, electrolysis of organoaluminum reagents with a tin anode, and the electrolysis of diethyl sulfate with a zinc cathode and a tin anode (106-109). The latter method probably involves the *in situ* generation of an organotin intermediate.

The reaction of an organotin-lithium, organotin-sodium, or organotin-magnesium reagent is occasionally useful for the preparation of tetraorganotins in the laboratory (93). These reagents or organostannyl anionoids are air- and moisture-sensitive and can be prepared from most triorganotin halides and some tetraorganotins:



Primary and secondary alkyl halides react well, but *tert*-alkyl halides are preferentially dehydrohalogenated by the tin reagents.

**Uses.** The main use for tetraorganotin compounds is as (usually captive) intermediates for the tri-, di-, and monoorganotins. Although there have been reports in the patent literature of the use of tetraorganotins as components of Ziegler-Natta-type catalysts for the polymerization of olefins, there is no evidence that such catalysts are used commercially.

**Triorganotins.** Triorganotins and diorganotins constitute by far the most important classes of organotins.

**Physical Properties.** Physical properties of some typical triorganotin halides are listed in Table 6 and those of commercially important triorganotin compounds are listed in Table 7. The triorganotin halides are insoluble in water, except for  $(\text{CH}_3)_3\text{SnCl}$  which is completely water soluble, but are soluble in most organic solvents. The fluorides are insoluble in most organic solvents because of their highly associated structure resulting from strong  $\text{SnF} \cdots \text{Sn}$  interactions.

Table 6. Physical Properties of Typical Triorganotin Halides<sup>a</sup>

Compound	CAS Registry No.	Mp, °C	Bp, °C	$n_D^{20}$	$d_4^{20}$ , g/cm <sup>3</sup>
$(\text{CH}_3)_3\text{SnCl}$	[1066-45-1]	37.5	154-156		
$(\text{CH}_3)_3\text{SnBr}$	[1066-44-0]	26-27	163-165		
$(\text{C}_6\text{H}_5)_3\text{SnCl}$	[1461-22-9]		152-156 <sub>0.13 kPa</sub> <sup>b</sup>	1.4930	1.2105
$(\text{C}_6\text{H}_5)_3\text{SnF}$	[1983-10-4]	218-219 (dec)			1.27 <sup>c</sup>
$(\text{C}_6\text{H}_5)_3\text{SnCl}$	[639-58-7]	106			
$(\text{C}_6\text{H}_5)_3\text{SnF}$	[379-52-2]	357 (dec)			
$(\text{C}_6\text{H}_{11})_3\text{SnCl}$	[3091-32-5]	129-130			

<sup>a</sup> Ref. 110.

<sup>b</sup> To convert kPa to mm Hg, multiply by 7.5.

<sup>c</sup> At 25°C.

Table 7. Physical Properties of Commercially Important Triorganotin Compounds

Compound	CAS Registry No.	Mp, °C	Bp, °C	$n_D^{20}$	$d_4^{20}$ , g/cm <sup>3</sup>
$[(\text{C}_6\text{H}_5)_3\text{Sn}]_2\text{O}$	[56-35-9]	<-45	210-214 <sub>0.13 kPa</sub> <sup>a</sup>	1.488	1.17
$(\text{C}_6\text{H}_5)_3\text{SnF}$	[1983-10-4]	218-219 (dec)			1.27 <sup>b</sup>
$(\text{C}_6\text{H}_5)_3\text{SnOCOC}_6\text{H}_5$	[4342-36-3]		166-168 <sub>0.13 kPa</sub> <sup>a</sup>	1.5157	1.1926
$(\text{C}_6\text{H}_5)_3\text{SnOCOCH}_3$	[56-36-0]	80-85			1.27
$(\text{C}_6\text{H}_5)_3\text{SnOH}$	[76-87-9]	118-120 (dec)			1.552 <sup>b</sup>
$(\text{C}_6\text{H}_5)_3\text{SnF}$	[379-52-2]	357 (dec)			1.53
$(\text{C}_6\text{H}_5)_3\text{SnOCOCH}_3$	[900-95-8]	119-120			
$(\text{C}_6\text{H}_{11})_3\text{SnOH}$	[13121-70-5]				
$(\text{C}_6\text{H}_{11})_3\text{SnN}_3\text{C}_2\text{H}_5$ <sup>d</sup>	[41083-11-8]	218.8			
$(\text{Neoph}_3)_3\text{Sn}_2\text{O}$ <sup>e</sup>	[13356-08-6]	138-139 <sup>f</sup>			

<sup>a</sup> To convert kPa to mm Hg, multiply by 7.5.

<sup>b</sup> At 25°C.

<sup>c</sup> No true melting point, converts to bis-oxide at above 120°C.

<sup>d</sup>  $\text{N}_3\text{C}_2\text{H}_5 = 1,2,4$ -triazole.

<sup>e</sup> Neoph = neophyl =  $\beta$ , $\beta$ -dimethylphenethyl.

<sup>f</sup> Technical material.

**Reactions.** The utility of triorganotin chlorides and their application as starting materials for most other triorganotin compounds results from the ease of nucleophile displacement, as indicated in Figure 1. The commercially important triorganotin compounds are most frequently the oxides or hydroxides, the fluorides, and the carboxylates.

The basic hydrolysis of trialkyltin halides and other salts forms bis(oxide)s since, except for trimethyltin, hydroxides are unstable towards dehydration at room temperature. With tin aryl, alkyl, and cycloalkyltin compounds, the hydroxides can be isolated. Although quite stable, they exist in mobile equilibrium with the bisoxide and water and are easily dehydrated. Trimethyltin hydroxide is exceptionally stable towards dehydration.

Triorganotin oxides and hydroxides are moderately strong bases and react readily with a wide variety of acidic compounds:

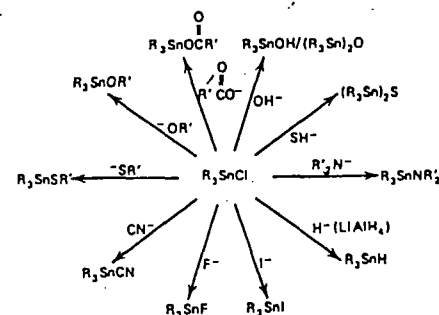
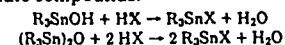
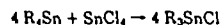


Figure 1. Reactions of triorganotin chlorides (110).

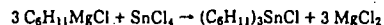
This reaction is useful in the preparation of anionic derivatives from the chlorides when the nucleophilic displacement route is unsatisfactory. Even weak acids, eg, phenols, mercaptans, and cyclic nitrogen compounds, can be made to undergo reaction with triorganotin hydroxides or bisoxides if the water of reaction is removed azeotropically as it forms.

Triorganotin compounds of strong acids are generally quite stable to hydrolysis under neutral conditions. Under basic conditions, the hydroxide or bisoxide forms. Strong acids, halogens, and other electrophiles can cause cleavage of tin-carbon bonds with the formation of diorganotins. The triorganotin oxides of lower alkyl groups ( $C_1$ - $C_4$ ) are sufficiently basic to react with carbon dioxide in air, resulting in the precipitation of triorganotin carbonates.

**Preparation.** Triorganotin chlorides of the general formula  $R_3SnX$  are the basic starting materials for other triorganotins. They are generally prepared by Kocheshkov redistribution from the crude tetraorganotin:

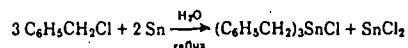


The stoichiometric reaction of Grignard or alkylaluminum reagents with stannic chloride to give the trialkyltin chloride usually gives a mixture of products. Only in a very few cases is it possible to alkylate tin tetrachloride directly to the triorganotin chloride in good yield with few by-products using a Grignard reagent. In such cases, the formation of the triorganotin is favored because of steric hindrance (111):



Acid, hydrogen halide, or halogen cleavage of tetraorganotins is not used except on a laboratory scale because they are wasteful of tin-carbon bonds and uneconomical on a commercial scale.

Tribenzyltin chloride [3151-41-5] is a unique example of a triorganotin chloride that can be prepared directly from the organic halide and tin metal:

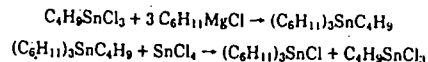


This reaction only proceeds in water. In a solventless system, only organic condensation products of benzyl chloride form, including dibenzyl. In toluene, dibenzyltin dichloride [3002-01-5] is the principal reaction product (112).

The production of triphenyltin hydroxide [76-87-9] and triphenyltin acetate [900-95-8] start with triphenyltin chloride, which is prepared by the Kocheshkov redistribution reaction from tetraphenyltin and tin tetrachloride. The hydroxide is prepared from the chloride by hydrolysis with aqueous sodium hydroxide. The acetate can be made directly from the chloride using sodium acetate or from the hydroxide by neutralization with a stoichiometric quantity of acetic acid.

For the preparation of tricyclohexyltin chloride, the Kocheshkov redistribution reaction is not suitable, since tetracyclohexyltin decomposes in the presence of stannic chloride at the normal redistribution temperatures. Two alternative routes are practiced for the manufacture of tricyclohexyltin chloride. The closely controlled reaction of cyclohexylmagnesium chloride and stannic chloride in a three-to-one molar ratio can be made to give the desired product in a good yield (111). Another method involves two steps for the preparation of tricyclohexyltin chloride (113). In the first step, butyltin trichloride [1118-46-3] reacts with three moles of cyclohexylmagnesium chloride forming butyltricyclohexyltin [7067-44-9]. This tetraorganotin then reacts

with stannic chloride under mild conditions in an inert solvent, cleaving a butyl group and yielding tricyclohexyltin chloride and butyltin trichloride. The latter is recovered and recycled. The reactions are shown below:



Tricyclohexyltin chloride is converted to the hydroxide with sodium hydroxide. The triazole can be prepared from the chloride with sodium or potassium hydroxide and 1,2,4-triazole.

Bis(trineophyltin) oxide [60268-17-4] is prepared from the chloride in the normal manner. The chloride can either be prepared directly from the reaction of three moles of neophylmagnesium chloride and stannic chloride or by the butyl transfer reaction between butyltrineophyltin and stannic chloride. The hydroxide derivative initially formed on hydrolysis of the chloride is readily dehydrated to the bis(oxide) at ca 100°C.

**Uses.** Triorganotin compounds are widely used as industrial biocides, agricultural chemicals, wood preservatives, and marine antifoulants. Although the *in vitro* fungicidal/biological activity of the triorganotins was recognized in the mid-1950s, commercial development was not seriously undertaken until the early 1960s (114-115). The triorganotins that are most useful as biological control agents, in general, are the tributyltins, triphenyltins, and tricyclohexyltins.

The lower trialkyltins from trimethyl to tri-*n*-pentyl show high biological activity. The trimethyltins are highly insecticidal and the tripropyl-, tributyl-, and triphenyltin compounds have a high degree of fungicide and bactericide activity. Dialkyltin compounds are less active than the analogous trialkyltins. The maximum activity towards bacteria and fungi is exhibited by the tripropyl and tributyltin compounds, with the tributyltins providing the optimum balance between fungicidal and bactericidal activity and mammalian toxicity. Tributyltin compounds, especially the oxide and benzoate, are used as antimicrobials and slimicides for cooling-water treatment and as hard-surface disinfectants. These and similar compounds have been used as laundry sanitizers and mildewcides to prevent mildew formation in the dried film of water-based emulsion paints. In most microbiocide applications, the tributyltin compound is used in conjunction with another biocide, usually a quaternary ammonium compound, to complement the activity of the organotin which is most effective against gram-positive bacteria.

Although the lower trialkyltins show high fungicide activity, they are unlikely candidates for agricultural fungicide use because of their high phytotoxicity to the host plant. Various attempts have been made to moderate the phytotoxicity of the lower trialkyltins by changing the anion portion of the molecule. These have not been successful since the nature of the anionic group has little influence on the spectrum of biological activity, provided that the anion is not biologically active and it confers a sufficient minimal solubility on the compound.

In the early 1960s, the first organotin-based agricultural fungicide, triphenyltin acetate, was introduced in Europe commercially by Farbwerke Hoechst A.G. as Brestan. Brestan, which is a protectant foliar fungicide, was recommended for the control of *phytophthora* (late blight) on potatoes and *cercospora* on sugar beets at application rates of a few ounces per acre (116). Shortly thereafter, triphenyltin hydroxide was introduced as Du-Ter by Philips-Duphar, N.V., with about the same ac-

tivity and spectrum of disease control as Brestan. Du-Ter is registered with the EPA in the United States as a fungicide for potatoes, sugar beets, pecans, and peanuts. Both compounds also exhibit a strong antifeedant effect on some insects and are fly sterilants at sublethal concentrations. Triphenyltin hydroxide formulations are also supplied by Griffin Corp. in the United States.

Tricyclohexyltin hydroxide was introduced into the U.S. market by the Dow Chemical Company as Plictran. Plictran was originally recommended for the control of phytophagous (plant-feeding) mites on apples and pears. It is also registered in the United States and in many European and Asian countries for this use as well as for mite control on citrus, stone fruits, and hops. This product has since been joined in the market by similar-acting, competitive products marketed by Shell and Bayer. Other triorganotin compounds with significant agricultural uses are tricyclohexyltin hydroxide (Plictran, Dow Chemical), and hexanophyldistannoxane (Vendex, Shell U.S.A.; Torque, Shell International Chemical).

Bis(tributyltin) oxide [56-35-9] is widely used in Europe for the preservation of timber, millwork, and wood joinery, eg, window sashes and door frames. It is applied from organic solution by dipping or vacuum impregnation. It imparts resistance to attack by fungi and insects but is not suitable for underground use. An advantage of bis(tributyltin) oxide is that it does not interfere with subsequent painting or decorative staining and does not change the natural color of the wood. Tributyltin phosphate,  $[(C_4H_9)_3Sn]_3PO_4$ , has also been suggested as a wood preservative.

Most surfaces in prolonged contact with seawater and freshwater are susceptible to the attachment of marine growths, eg, algae and barnacles.

The most common method for preventing marine fouling has been to paint the underwater structure of the vessel with an antifouling paint containing a toxicant. For many years, the antifouling agent of choice was cuprous oxide, but there has been a strong trend towards the use of triorganotin compounds, both alone and in combination with cuprous oxide (117). Preferred compounds for use in this application are tributyltin fluoride, triphenyltin hydroxide, and triphenyltin fluoride since they are highly active against a wide range of fouling species. Bis(tributyltin) oxide, tributyltin acetate, and other tributyltin carboxylates have also been successfully used as antifoulants. Triorganotin compounds offer many advantages over cuprous oxide. Since they are colorless, they can be used in the preparation of paints of a variety of colors. Unlike cuprous oxide, they do not contribute to galvanic corrosion on steel or aluminum hulls. The triorganotins are rapidly degraded into lower alkylated species and then to nontoxic inorganic tin once released from the coating. Inorganic copper, on the other hand, is toxic in all its forms.

There has been much interest in eroding antifouling paints that are based on tributyltin acrylate [13331-52-7] or methacrylate [2155-70-6] copolymers with various organic acrylate esters as the combined toxicant and paint binder resin (117). Such paints erode in moving seawater because the triorganotin portion slowly hydrolyzes from the acrylic backbone in normally basic seawater, releasing the active species tributyltin chloride and bis(tributyltin) oxide. The depleted surface layer of the paint film, containing hydrophilic-free carboxylic acid groups, becomes water-swollen and is easily eroded by moving seawater. A fresh surface of triorganotin acrylate polymer is thereby exposed and the process repeats. Coatings based on organotin polymers can be formulated to release the toxicant at a rate which is linear with time. Such coatings are claimed to reduce fuel costs over and above the savings resulting from

a clean hull by providing a surface which becomes smoother with time. M&T Chemicals, Inc., is a worldwide supplier of a variety of tributyltin methacrylate copolymers with different hydrolysis and erosion rates (bioMeT 300 series antifoulant polymers). Paints based on organotin copolymers are offered by the principal marine paint companies, including Hempel's Marine Paints (Nautic Modules), International Paint Co., Ltd. (Intersmooth SPC), Nippon Oil & Fats Co., Ltd., and Jotun Marine Coatings (Takata LLL) (see Coatings, marine).

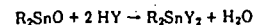
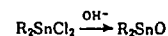
The advantages claimed for organotin polymer-based antifouling paints include constant toxicant delivery versus time, erosion rate and toxicant delivery are controllable, no depleted paint residue to remove and dispose, 100% utilization of toxicant, polishing at high erosion rates, surface is self-cleaning, and function is continuously reactivated.

Triorganotin compounds have also been used experimentally in controlled-release formulations to control the infective snail vector in the debilitating tropical disease schistosomiasis (bilharzia) and to control mosquitoes in stagnant ponds (118). As yet, the large-scale use of such methods has little support in the host third world countries where these problems are most severe. Tributyltin chloride has been used to confer rodent-repellent properties on wire and cable coatings (119) (see Repellents, Supplement Volume).

**Diorganotins. Physical Properties.** Physical properties of some typical diorganotin compounds are shown in Table 8. The diorganotin chlorides, bromides, and iodides are soluble in many organic solvents and, except for dimethyltin dichloride, are insoluble in water.

Commercial grades of diorganotin carboxylates frequently have wider melting ranges because of the use of less pure grades of carboxylic acids in their manufacture which, for many applications, permits more facile handling of the liquids.

**Reactions.** Although there are few industrial applications for the diorganotin halides, these compounds are the basic intermediates for the preparation of all the commercially important diorganotin derivatives. They are prepared by nucleophilic displacement similar to that used for triorganotin derivatives (see Fig. 1). Basic hydrolysis of the diorganotin halides gives the diorganotin oxides in high yield. Except in rare cases, dihydroxide derivatives are unknown. As with the triorganotins, diorganotin oxides are sometimes used as intermediates from which other derivatives can be obtained by neutralization with strong or weak acids:



Diorganotin dihalides are moderately strong Lewis acids and form stable complexes with ammonia and amines. The commercially important diorganotin compounds are most frequently the oxides, carboxylates, and mercaptocarboxylic acid esters. The oxides are amorphous or polycrystalline, highly polymeric, infusible, and insoluble solids. They are moderately strong bases and react readily with a wide variety of strongly and weakly acidic compounds. Their insolubility in all nonreactive solvents makes the choice of proper reaction conditions for such a neutralization reaction an important consideration for optimum yields.

Diorganotin esters of strong acids are relatively stable to hydrolysis under neutral conditions, but, generally, diorganotin compounds are more reactive chemically than

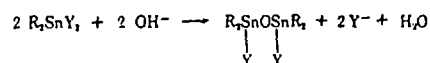
Table 8. Physical Properties of Diorganotin Compounds<sup>a</sup>

Compound	CAS Registry No.	Mp, °C	Bp, °C	$n_D^{20}$	$d_4^{20}$ , g/cm <sup>3</sup>
(CH <sub>3</sub> ) <sub>2</sub> SnCl <sub>2</sub>	[753-73-1]	107-108	185-190		
(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> SnCl <sub>2</sub>	[683-18-1]	41-42	140-143 <sub>1.3</sub> kPa <sup>b</sup>	1.5400	1.3913 <sup>c</sup>
(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> SnBr <sub>2</sub>	[996-08-7]	21-22	90-92 <sub>0.04</sub> kPa <sup>b</sup>	1.6042	1.996 <sup>c</sup>
(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> SnI <sub>2</sub>	[2865-19-2]		145 <sub>0.8</sub> kPa <sup>b</sup>		
(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> SnCl <sub>2</sub>	[1135-99-5]	42-44	180-185 <sub>0.7</sub> kPa <sup>b</sup>		
(CH <sub>3</sub> OC(O)CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> SnCl <sub>2</sub>	[10175-01-6]	132			
(CH <sub>3</sub> ) <sub>2</sub> Sn(SC <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	[1000-40-4]		81 <sub>0.013</sub> kPa <sup>b</sup>	1.5400	1.280
(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> Sn(OCH <sub>3</sub> ) <sub>2</sub>	[1067-55-6]		126-128 <sub>0.7</sub> kPa <sup>b</sup>	1.4880	
[(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> SnS] <sub>2</sub>	[15220-82-3]	63-69			
(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> Sn(OCCH <sub>3</sub> ) <sub>2</sub>	[1067-33-0]	8.5-10	142-145 <sub>1.3</sub> kPa <sup>b</sup>	1.4706	
(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> Sn(C <sub>11</sub> H <sub>23</sub> CO) <sub>2</sub>	[77-58-7]	22-24		1.4683	1.05
(C <sub>4</sub> H <sub>9</sub> CHCO) <sub>2</sub> Sn(C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub>	[2781-10-4]	54-60	215-220 <sub>0.3</sub> kPa <sup>b</sup>	1.4653	1.070 <sup>c</sup>
[(C <sub>2</sub> H <sub>5</sub> O) <sub>2</sub> PS] <sub>2</sub> Sn(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub>	[74097-03-3]	149.5			

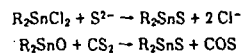
<sup>a</sup> Refs. 110 and 120.<sup>b</sup> To convert kPa to mm Hg, multiply by 7.5.<sup>c</sup> At 25°C.

the triorganotin. Diorganotin esters of weak acids are somewhat susceptible to hydrolysis, even under neutral conditions, but this reactivity is somewhat moderated by their hydrophobicity.

On partial hydrolysis, diorganotin halides and carboxylates may form basic salts of rather complicated structure:

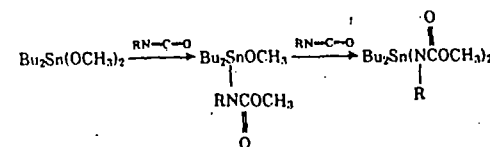


Diorganotin sulfides can be prepared from the chlorides or oxides by the exchange of a reactive substituent for sulfur:

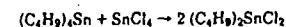


The sulfides are associated like the oxides, but to a lesser degree. They are crystalline, sharp-melting, soluble in many organic solvents, and resistant to hydrolysis. Most are cyclic trimers (121).

Some diorganotin compounds, eg, the alkoxides, add to hetero-unsaturated systems, eg, isocyanates. This reaction is believed to occur in stages (122).

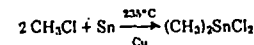


**Preparation.** Diorganotin dichlorides are the usual precursors for all other diorganotin compounds; three primary methods of manufacture are practiced. Dibutyltin dichloride is manufactured by Kocheshkov redistribution from crude tetrabutyltin and stannic chloride and usually is catalyzed with a few tenths of a percent aluminum trichloride:



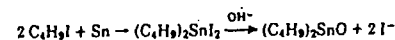
Yields are almost quantitative and product purity is good with formation of only minute amounts of mono- and tributyltin by-products.

Many organic halides, especially alkyl bromides and iodides, react directly with tin metal at elevated temperatures (>150°C). Methyl chloride reacts with molten tin metal giving good yields of dimethyltin dichloride, which is an important intermediate in the manufacture of dimethyltin-based PVC stabilizers (see Uses). The presence of catalytic metallic impurities, eg, copper and zinc, is necessary to achieve optimum yields (123):



The reaction of higher alkyl chlorides with tin metal at 235°C is not practical because of the thermal decomposition which occurs before the products can be removed from the reaction zone. The reaction temperature necessary for the formation of dimethyltin dichloride can be lowered considerably by the use of certain catalysts. Quaternary ammonium and phosphonium iodides allow the reaction to proceed in good yield at 150-160°C (124). An improvement in the process involves the use of amine-stannic chloride complexes or mixtures of stannic chloride and a quaternary ammonium or phosphonium compound (125). Use of these catalysts is claimed to yield dimethyltin dichloride containing less than 0.1 wt % trimethyltin chloride. Catalyzed direct reactions under pressure are used commercially to manufacture dimethyltin dichloride.

The direct reaction of tin metal with higher haloalkanes is less satisfactory even when catalysts are used, except with alkyl iodides. The reaction of butyl iodide with tin metal is used commercially in Japan to prepare dibutyltin diiodide, from which dibutyltin oxide is obtained on hydrolysis with base:



The economics of this process depend on near-quantitative recovery and recycle of the iodine to prepare butyl iodide.

Tin metal also reacts directly with a number of activated organic halides, including allyl bromide, benzyl chloride, chloromethyl methyl ether, and β-halocarboxylic esters and nitriles giving fair-to-good yields of diorganotin dihalides (112,126-129).

The facile reaction of metallic tin in the presence of hydrogen chloride with acrylic

esters to give high yields of bis( $\beta$ -alkoxycarbonyl ethyl)tin dichlorides is reported in refs. 130-131. This reaction proceeds at atmospheric pressure and room temperature and has been practiced commercially. Halogenostannanes have been postulated as intermediates (120).

**Uses. Poly(vinyl chloride) stabilizers.** The largest single industrial application for organotin compounds is in the stabilization of PVC. Of the estimated 30,000-t world production of organotins, it is believed that 20,000 t or two thirds of production, is accounted for by PVC stabilization (7). The estimated 1981 U.S. consumption of organotins as PVC stabilizers was 10,650 t, representing 27% of the market. Organotins are added to PVC to prevent its degradation by heat (180-200°C) during processing and by long-term exposure to sunlight (132-154).

Dialkyltin compounds are the best general-purpose stabilizers for PVC, especially if colorlessness and transparency are required. Commercial organotin stabilizers include the carboxylates, especially the maleates, laurates, and substituted maleates; the mercaptide, the mercaptoacid, and mercaptoalcohol ester derivatives (see Monoorganotin compounds); and the estertins, 2-carboalkoxyethyltin derivatives. The common industrial organotin stabilizers are listed in Table 9. U.S. producers of organotin stabilizers and the trade names of their products are: Argus (Witco), Mark; Cardinal, Cardinal Clear; Thiokol, Carstab; Ferro, Thermchek and Polychek; Interstab (Akzo), Interstab and Stanclore; M&T Chemicals, Thermolite; Tenneco, Nuostabe; and Synthetic Products (Dart), Synpron.

Sulfur-containing organotins impart excellent heat stability to PVC, but non-sulfur-containing organotins are used when resistance to light and weathering are required. The two main markets for organotin stabilizers are in the packaging and building industries. In the packaging industry, certain organotin stabilizers are used in PVC food packaging and drink containers. In the United States and the FRG, dioctyltin bis(isooctylmercaptoacetate), and butylthio-stannoic acid [26410-42-4] are approved for use in PVC food packaging; in the FRG,

Table 9. Typical Commercially Significant Organotin PVC Stabilizers

Compound	CAS Registry No.	Structure
dibutyltin bis(isooctyl mercaptoacetate)	[25168-24-5]	$(C_4H_9)_2Sn(SCH_2CO_2C_8H_{17})_2$
dioctyltin bis(isooctyl mercaptoacetate)	[26401-97-8]	$(C_8H_{17})_2Sn(SCH_2CO_2C_8H_{17})_2$
dimethyltin bis(isooctyl mercaptoacetate)	[26636-01-1]	$(CH_3)_2Sn(SCH_2CO_2C_8H_{17})_2$
bis(2-carbobutoxyethyltin) bis(isooctyl mercaptoacetate)	[63397-60-4]	$(C_4H_9OCOCH_2CH_2)_2Sn(SCH_2CO_2C_8H_{17})_2$
dibutyltin sulfide	[4253-22-9]	$(C_4H_9)_2SnS$
dibutyltin bis(lauryl mercaptide)	[1185-81-5]	$(C_4H_9)_2Sn(SC_{12}H_{25})_2$
dibutyltin $\beta$ -mercaptoacetate	[27380-35-4]	$\dagger(C_4H_9)_2SnSCH_2CH_2COO\frac{1}{n} (n = 1 \text{ to } 3)$
dibutyltin bis(mercaptoethyldecannate) (also other esters)	[28570-24-3]	$(C_4H_9)_2Sn(SCH_2CH_2OC(O)C_{11}H_{23})_2$
butylthio-stannoic acid anhydride	[15666-29-2]	$\begin{array}{c} S \\    \\ (C_4H_9)_2Sn \end{array}$
butyltin tris(isooctylmercaptoacetate)	[25852-70-4]	$C_4H_9Sn(SCH_2CO_2C_8H_{17})_3$
dibutyltin dilaurate	[77-58-7]	$(C_4H_9)_2Sn(OOCC_{11}H_{23})_2$
dibutyltin maleate (dioctyltin derivative)	[32076-99-6]	$\dagger(C_4H_9)_2SnOOCC=CHCOO\frac{1}{n} (n = 1 \text{ to } 3)$
dibutyltin bis(monoisooctylmaleate) (also other alkyl maleate esters)	[25168-21-2]	$(C_4H_9)_2Sn(OOCC=CHCOOC_8H_{17})_2$

dimethyltin bis(isooctylmercaptoacetate), 2-carbobutoxyethyltin tris(isooctylmercaptoacetate) [63438-80-2], and bis(2-carbobutoxyethyltin) bis(isooctylmercaptoacetate) are also approved. These uses reflect the low toxicity of these organotin stabilizers.

In the building industry, rigid PVC is stabilized with diorganotin carboxylates, especially dibutyltin maleate, for use in floorings and light fixture glazing and with diorganotin mercaptides and mercaptoacid esters for use in sidings, profiles, roofing, fencing, window frames, and piping. The dibutyltin, dimethyltin, and estertin sulfur-containing derivatives are used for these nonfood applications as well as in PVC potable-water piping.

**Polyurethane foam catalysts.** Early production of polyurethane foams involved a two-step reaction in which a polyether glycol reacted with toluene diisocyanate forming a urethane prepolymer having reactive isocyanate end groups. Water was then added to condense the neighboring isocyanate groups to urethane linkages. In the process, carbon dioxide formed, which acted on the gelling polymer to produce a rigid or elastomeric foam. Inorganic tin compounds and diorganotin compounds, eg, dibutyltin diacetate [1067-33-0], dilaurate [77-58-7], and di(2-ethylhexanoate) [2781-10-4], catalyze the glycol-isocyanate reaction as well as the urethane condensation step and enable the preparation of foams in one step in a semicontinuous process (155-156). In the United States, dibutyltin compounds are used mostly in the catalysis of rigid foams and the laurate has been the catalyst of choice (157) (see Urethane polymers).

Diorganotin compounds have been used increasingly as catalysts for high resiliency foam in automotive seating. In high resiliency foam, diorganotin mercaptocarboxylates and mercaptides as catalysts improve some key physical properties (158). Some diorganotins, eg, the mercaptocarboxylates and mercaptides, are stable enough to be used in the preparation of masterbatches containing premixed polyol, water surfactant, amine, and organotin catalyst which are stored for up to six months (159). The principal suppliers of organotin-based polyurethane catalysts in the United States are M&T Chemicals, Inc., and Witco Chemical Corp.

**Esterification catalysts.** Dibutyltin compounds as well as monobutyltins are used increasingly as esterification (qv) catalysts for the manufacture of organic esters used in plasticizers (qv), lubricants, and heat-transfer fluids (see Lubrication and lubricants; Heat-exchange technology). Although esterification reactions catalyzed by organotins require higher temperatures (200-230°C) than those involving strong acid catalysts, eg, *p*-toluenesulfonic acid, side reactions are minimized and the products need no extensive refining to remove acidic ionic catalyst residues. Additionally, equipment corrosion is eliminated and the products have better color and odor properties because fewer by-products form (160). Usual catalyst levels are 0.05-0.3 wt % based on the total reactants charged. Dibutyltin compounds are also useful in catalyzing the transesterification and polycondensation of dimethyl terephthalate to poly(ethylene terephthalate) for packaging applications and in the manufacture of polyester-based alkyd resins (161). Both solid and liquid and insoluble and soluble organotin-based esterification catalysts are marketed by M&T Chemicals, Inc., as Fascat (see Polyesters).

**Other.** Dibutyltin dilaurate [77-58-7] has been successfully used for many years as a coccidiostat in the treatment of intestinal worm infections in chickens and turkeys (see Chemotherapeutics, antiprotozoal).

In Japan and Europe, dimethyltin dichloride that has been purified to remove all traces of trimethyltin chloride is used to provide a thin coating of stannic oxide on glass upon thermal decomposition at 500–600°C. Thin deposits of stannic oxide improve the abrasion resistance and bursting strength of glass bottles. Dimethyltin dichloride is manufactured and marketed as Glahard by Chugoku Torio Co., Ltd., Shiga, Japan. Electroconductive films can be formed with thick coatings of tin oxide that is deposited in this manner.

Dibutyltin and dioctyltin diacetate, dilaurate, and di-(2-ethylhexanoate) are used as catalysts for the curing of room-temperature-vulcanized (RTV) silicone elastomers to produce flexible silicone rubbers used as sealing compounds, insulators, and a wide variety of other uses. Diorganotin carboxylates also catalyze the curing of thermosetting silicone resins, which are widely used in paper-release coatings.

In addition, diorganotin compounds are used as transesterification catalysts for the curing of cathodic, electrocoated paints (162). The biological activity and toxicity of diorganotins are much less than of analogous triorganotins with the same carbon-bonded organic groups.

**Monoorganotins. Physical Properties.** Properties of some monoorganotin trihalides are listed in Table 10. The monoorganotin trihalides are hygroscopic, low melting solids or liquids which are to varying extents hydrolyzed in water or moist air, liberating the hydrogen halides. They are soluble in most organic solvents and in water that contains enough acid to retard hydrolysis.

**Chemical Properties.** The monoorganotin trihalides are strong Lewis acids and form complexes with ammonia, amines, and many other oxygenated organic compounds, eg, ethers. In many ways, they resemble acid chlorides. As with the diorganotin dichlorides, the halogens on the molecule are easily replaced by a wide variety of nucleophilic reagents, making these trihalides useful intermediates for other monoorganotins. Typical compounds, which are easily formed by displacement reactions, include tris(alkoxides), tris(carboxylates), tris(mercaptides), and tris(mercaptocarboxylate esters). These compounds are generally more easily hydrolyzed than the analogous diorganotins.

The oxide monobutyltin oxide [51590-67-1], is a sesquioxide,  $C_4H_9SnO_{1.5}$ , from which it is difficult to remove the last traces of water. It is an infusible, insoluble, amorphous white powder that forms when butyltin trichloride is hydrolyzed with base. The partially dehydrated material, butylstannoic acid [2273-43-0], is slightly acidic and forms alkali-metal salts. These salts, ie, alkali-metal alkylstannonates, form when excess alkali is used to hydrolyze the organotin trichloride:



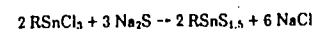
Partially hydrolyzed products of the form  $RSn(OH)_2Cl$  are believed to be mixtures in most cases.

Table 10. Physical Properties of Typical Organotin Trihalides

Compound	CAS Registry No.	Mp, °C	Bp, °C	$n_D^{20}$
$CH_3SnCl_3$	[993-16-8]	45–46		
$CH_3SnBr_3$	[993-15-7]	53	211	
$C_4H_9SnCl_3$	[1118-46-3]		102–103, 5 kPa*	1.5233
$C_6H_5SnCl_3$	[1124-19-2]		142–143, 3.3 kPa*	1.5871

\* To convert kPa to mm Hg, multiply by 7.5.

When organotin trihalides are treated with alkali-metal sulfide, the sesquisulfides form (163):



At least one, the monobutyl compound, is a tetramer in benzene (163).

**Preparation and Manufacture.** Monoorganotin halides are the basic raw materials for all other triorganotin compounds and are generally prepared by Kocheshkov redistribution from the tetraorganotin, eg, tetrabutyltin or the higher organotin halides:

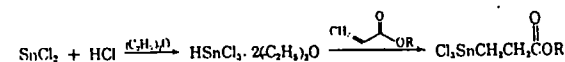


The oxidative addition of aliphatic organic halides to stannous chloride has long been of interest for the preparation of monoorganotin trihalides:



This reaction gives fair-to-good yields of monoorganotin tribromides and trichlorides when quaternary ammonium or phosphonium catalysts are used (164). Better yields are obtained with organic bromides and stannous bromide than with the chlorides. This reaction is also catalyzed by trialkylantimony compounds at 100–160°C, bromides are more reactive than chlorides in this preparation (165–166).  $\alpha,\omega$ -Dihaloalkanes also react in good yield giving  $\omega$ -haloalkyltin trihalides when catalyzed by organoantimony compounds (167).

A significant advance in the synthesis of monoorganotin trihalides was the preparation of  $\beta$ -substituted ethyltin trihalides in good yield from the reaction of stannous chloride, hydrogen halides, and  $\alpha,\beta$ -unsaturated carbonyl compounds, eg, acrylic esters, in common solvents at room temperature and atmospheric pressure (168–169). The reaction is believed to proceed through a solvated trichlorostannane intermediate (170):



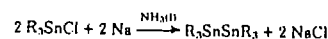
This reaction can be extended to unsaturated nitriles, eg, acrylonitrile, which can give trihalostannyl-functional carboxylic acids, esters, and amides by the proper choice of solvents and reaction conditions (171).

**Uses. Poly(vinyl chloride) stabilizers.** Although generally less effective as PVC stabilizers than dialkyltin derivatives, monoalkyltin compounds added to the dialkyltin compounds in amounts of 5–20 wt % exert a synergistic effect on stabilizer effectiveness, preventing early yellowing. They supposedly function by reacting more quickly and at lower processing temperatures than the dialkyltin species, thus preventing the early onset of yellowing; conversely, diorganotins are more effective in retarding the long-term degradation of the polymer. Butylthiostannoic acid anhydride is used as a sole stabilizer for certain grades of PVC in the FRG but elsewhere is rarely used alone (172). It is approved in the FRG and in the United States for food packaging (173). In the FRG, the following monoorganotins alone or in mixtures are also approved for this use: butylthiostannoic acid anhydride with either dioctyltin compounds or 2-

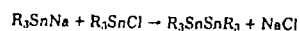
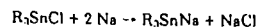
carbutoxyethyltin compounds, 2-carbutoxyethyltin tris(isooctylmercaptoacetate) alone or mixed with its dicounterpart, monomethyltin tris(isooctylmercaptoacetate) [56225-49-1] plus its dicounterpart in a 24:76 wt % ratio, and monoethyltin tris[alkyl ( $C_{10}-C_{16}$ , isooctyl) mercaptoacid esters] with their dicounterparts.

**Treatment of glass.** The use of monobutyltin trichloride in the hot-end coating of glass to improve the abrasion resistance and bursting strength of glass bottles has been patented, and the deposition process variables and product advantages have been described (174-176). Highly efficient utilization of tin is one of the main benefits.

**Compounds with Tin-Tin Bonds.** The most important class of catenated tin compounds is the hexaorganoditins. The ditin compounds are usually prepared by reductive coupling of an triorganotin halide with sodium in liquid ammonia:



This reaction proceeds in stages via an organostannylsodium compound:



Lithium metal in tetrahydrofuran can also be used as the coupling reagent, and unsymmetrical ditins can be prepared when the reaction is conducted in stages (177-178).

Hexaorganoditins with short-chain aliphatic groups are colorless liquids, distillable under vacuum, soluble in organic solvents other than the lower alcohols, and insoluble in water. They are generally unstable in air, undergoing ready oxidation to a mixture of organotin compounds. Hexaarylditins are usually crystalline solids and are much more stable towards oxidation.

The ditins as of yet are insignificant commercially, although there has been interest in hexamethylditin [661-69-8] (Pennwalt TD-5032) as an insecticide (179-180).

**Salts.** Organic tin salts are tin compounds containing an organic radical in which the tin is bonded with an element other than carbon. The most common of these are the tin carboxylates, especially the stannous carboxylates. The latter are manufactured by reaction of stannous oxide or chloride with the appropriate acid. The most commercially significant of the stannous carboxylates is stannous 2-ethylhexanoate [301-10-0]. It is estimated that in 1979, worldwide annual consumption of tin-based catalysts for polyurethanes was ca 2500 t with stannous 2-ethylhexanoate accounting for 95% of this usage (155). The second most important industrial organic tin salt is stannous oxalate [814-94-8]. Other commercially available, organic tin salts that are of minor commercial importance are listed in Table 11.

**Stannous 2-Ethylhexanoate.** Stannous 2-ethylhexanoate,  $Sn(C_8H_{15}O_2)_2$  (sometimes referred to as stannous octanoate, mol wt 405.1, sp gr 1.26), is a clear, very light yellow, and somewhat viscous liquid that is soluble in most organic solvents and in silicone oils (181). It is prepared by the reaction of stannous chloride or oxide with 2-ethylhexanoic acid.

The primary use for stannous 2-ethylhexanoate is as a catalyst with certain amines for the manufacture of one-shot polyether urethane foams (182). Resulting foams exhibit good dry-heat stability over a wide range of catalyst concentrations. Food-grade

Table 11. Physical Properties of Organic Tin Salts of Minor Commercial Importance

Salt	CAS Registry No.	Mp, °C	Density, g/cm <sup>3</sup>	Use
stannous acetate	[638-39-1]	182.5-183	2.31	promotes dye uptake by fabrics
stannous ethylene glycoloxide	[68921-71-1]	dec >300	2.87	esterification catalyst
stannous formate	[2879-85-8]	dec >100		catalyst for hydrogenation of liquid fuels
stannous gluconate	[35984-19-1]		1.35	silicone catalyst
stannous oleate	[1912-84-1]		1.06	silicone catalyst
stannous stearate	[6994-59-8]	90; dec 340	1.05	catalyst
stannous tartrate	[815-85-0]	dec 280	2.6	dyeing and printing of textiles

stannous 2-ethylhexanoate is approved by the FDA for use in polymers and resins used in food packaging (183). Other industrial applications include its use as a catalyst in silicones, including room-temperature-vulcanizing (RTV) silicone rubbers and silicone-oil emulsions; in epoxy formulations; and in various urethane coatings and sealants (qv) (184-185). Proprietary catalyst formulations based on stannous 2-ethylhexanoate are also available.

**Stannous Oxalate.** Stannous oxalate,  $Sn(C_2O_4)_2$  (mol wt 206.71, dec 280°C, sp gr 3.56 at 18°C), is a white crystalline powder, is soluble in hot concentrated hydrochloric acid and mixtures of oxalic acid and ammonium oxalate, and is insoluble in water, toluene, ethyl acetate, dioctyl phthalate, THF, isomeric heptanes, and acetone (186). It is prepared by precipitation from a solution of stannous chloride and oxalic acid and is stable indefinitely.

Stannous oxalate is used as an esterification and transesterification catalyst for the preparation of alkyds, esters, and polyesters (187-188). In esterification reactions, it limits the undesirable side reactions responsible for the degradation of esters at preparation temperatures. The U.S. Bureau of Mines conducted research on the use of stannous oxalate as a catalyst in the hydrogenation of coal (189) (see Coal).

**Toxicology.** The toxicological properties of organotin compounds are reviewed in refs. 57, 89-92, 190. The toxicity of organotin compounds is a reflection of their biological activity. Thus, the most toxic to mammals, including man, are the lower trialkyltin compounds, ie, trimethyltin and triethyltin. As with the fungicidal activity, the toxicity seems little affected by the nature of the anionic group bonded to the trialkyltin moiety. There is some evidence that triorganotin compounds that are five-coordinate and intramolecularly chelated are less toxic than similar unchelated four-coordinate compounds (191-192). As a general rule, the toxicity of the trialkyltins decreases with increasing chain length of the alkyl group.

The acute oral mammalian toxicities of typical triorganotin compounds, including some which are not used commercially, are listed in Table 12. In some cases, two or more substantially different values are reported in the literature for the same test animal. In these cases, both high and low values are tabulated. The toxicity of triorganotin is strongly dependent on the nature of the organic groups bonded to tin. The toxicity varies from the highly toxic lower alkyl trimethyl and triethyltins, which are not used in any commercial applications, to the substantially less toxic trineophyl and trioctyl derivatives. The widely used tributyl-, triphenyl-, and tricyclohexyltin de-

Table 12. Acute Oral Toxicities of Triorganotin Compounds

Compound	CAS Registry No.	LD <sub>50</sub> , mg/kg	Test animal	Ref.
$(\text{CH}_3)_3\text{SnOCCH}_3$	[1118-14-5]	9	rat	200
$(\text{C}_2\text{H}_5)_3\text{SnOCCH}_3$	[1907-13-7]	4	rat	200
$(\text{C}_3\text{H}_7)_3\text{SnOCCH}_3$	[3267-78-5]	118	rat	200
$(\text{C}_4\text{H}_9)_3\text{SnOCCH}_3$		133	rat	190
$[(\text{C}_4\text{H}_9)_3\text{Sn}]_2\text{O}$	[56-35-9]	380	rat	200
$(\text{C}_4\text{H}_9)_3\text{SnF}$		200	rat	190
$(\text{C}_6\text{H}_{13})_3\text{SnOCCH}_3$	[2897-46-3]	1,000	rat	200
$(\text{C}_8\text{H}_{17})_3\text{SnOCCH}_3$	[919-28-8]	>1,000	rat	200
$(\text{C}_4\text{H}_9)_3\text{SnOCCH}_3$		136	rat	190
		491	rat	190
$(\text{C}_6\text{H}_5)_3\text{SnOH}$		108	rat	208
		209	mouse	208
$(\text{C}_6\text{H}_{11})_3\text{SnOH}$		540	rat	208
		780	guinea pig	208
$(\text{Neoph}_3\text{Sn})_2\text{O}^*$		1,450	mouse	208
		>1,500	dog	208
		2,630	rat	208

\* Neoph = neophyl =  $\beta,\beta$ -dimethylphenethyl.

rivatives are intermediate in mammalian oral toxicity. The highest trialkyl and triaryltins are less toxic when given orally than when given parentally because of their poor absorption from the gastrointestinal tract (193). Uncoupling of oxidative phosphorylation in cellular mitochondria has been suggested as one of the mechanisms of lower trialkyltin toxicity (194).

Most triorganotins that have been studied and all commercial ones are eye and skin irritants. Animal studies have shown that, particularly with tributyl and triphenyltin compounds, untreated eye contact can result in permanent corneal damage. If allowed to remain in contact with the skin for prolonged periods, these compounds can produce severe irritation and, in some cases, severe chemical burns (195). Thus, eye and skin protection must be worn when handling triorganotin compounds. Sometimes the irritant effect is delayed and may not be apparent for several hours. In the event of acute local dermal contact episodes with tributyltin compounds, pruritis, minor edema, and follicular pustules in hirsute areas occur. Systemic effects are observed in percutaneous tests of tributyltin iodide, bromide, chloride and bis-oxide in tests with rabbits, so it could be assumed that these compounds are absorbed through the skin (196). Bis(tributyltin) oxide produces a typical lower trialkyltin re-

sponse dermally, characterized by redness, swelling, and skin discoloration in test animals. Its effects on the eyes are serious with damage to the cornea (196).

Among the most widely studied triorganotin compounds are triphenyltin hydroxide, triphenyltin acetate, and tricyclohexyltin hydroxide because of their use as agricultural chemicals. Triphenyltin hydroxide is a severe eye irritant in rabbits but is nonirritating to dry rabbit skin (197). In contrast, triphenyltin chloride on rabbits produces erythema and edema with tissue damage. The injuries are worsened by washing with organic solvent (196). In feeding tests on rats and mice, triphenyltin hydroxide shows no evidence of carcinogenicity (198).

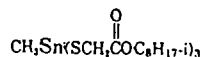
Diorganotin compounds as a class are substantially less toxic than the analogous triorganotins. Some compounds of this class are used as additives in plastics intended to be in contact with food or potable water or used as PVC stabilizers. The acute oral toxicities of common commercial diorganotin compounds are given in Table 13. The dialkyltin chlorides and oxides generally show decreasing oral toxicity with increasing length of the alkyl chain. The toxicity of the lower dialkyltins is believed to be related to their ability to combine with enzymes containing two thiol groups in a suitable stereochemical conformation and thereby inhibiting the oxidation of  $\alpha$ -ketoacids in the cell (199). 2,3-Dimercapto-1-propanol,  $\text{HSCH}_2\text{CH}(\text{SH})\text{CH}_2\text{OH}$ , has been reported as an effective antidote for lower dialkyltin poisoning (83). The lower dialkyltin halides are somewhat less irritating to the skin than the analogous triorganotins, but skin contact should be avoided. Other studies of the toxicities of specific diorganotin compounds are reported in refs. 200-202.

Table 13. Acute Oral Toxicities of Diorganotin Compounds

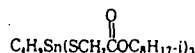
Compound	CAS Registry No.	LD <sub>50</sub> (rat), mg/kg	Ref.
$(\text{CH}_3)_2\text{SnCl}_2$		74	190
$(\text{CH}_3)_2\text{Sn}(\text{SCH}_2\text{COCH}_2\text{H}_{17-i})_2$	[26636-01-1]	1380	190
$(\text{C}_4\text{H}_9)_2\text{SnCl}_2$		126	190
$(\text{C}_4\text{H}_9)_2\text{SnO}$	[818-08-6]	600-800	204
$(\text{C}_6\text{H}_{13})_2\text{Sn}(\text{OCC}_6\text{H}_{13})_2$		175	190
$(\text{C}_6\text{H}_5)_2\text{Sn}(\text{SCH}_2\text{COCH}_2\text{H}_{17-i})_2$	[25168-24-5]	500	190
$(\text{C}_6\text{H}_{17})_2\text{SnCl}_2$	[3542-36-7]	5500	190
$(\text{C}_8\text{H}_{17})_2\text{SnO}$	[870-08-6]	2500	190
$(\text{C}_8\text{H}_{17})_2\text{Sn}(\text{OCC}_8\text{H}_{17})_2$	[3648-18-8]	6450	190
$(\text{C}_8\text{H}_{17})_2\text{Sn}(\text{SCH}_2\text{COCH}_2\text{H}_{17-i})_2$	[26401-97-8]	2000	190
$(\text{ROCCCH}_2\text{CH}_2)_2\text{SnCl}_2^*$		2350	203
$(\text{ROCCCH}_2\text{CH}_2)_2\text{Sn}(\text{SCH}_2\text{COCH}_2\text{H}_{17-i})_2^*$		1430	203

\* R is undefined; it is probably  $\text{C}_2\text{H}_5$ .

Monoorganotin compounds present no special toxicological problems. In general, they show the familiar trend of decreasing toxicity with increasing alkyl chain length, but of a lower order of toxicity than the diorganotin. As with most organotin compound classes, there are conflicting toxicity data and exceptions to general rules. Monobutyltin sulfide [15666-29-2] (butylthiostannoic anhydride, BTSA, poly[(1,3-dibutylthiostannothiondiylidene)-1,3-dithio] is allowed as a stabilizer in semirigid or rigid PVC used in food packaging. Typical LD<sub>50</sub> values for monoorganotin compounds are



920 mg/kg (rats) (203);



1063 mg/kg (rats) (203); ( $\text{C}_4\text{H}_9\text{SnS}_{1.5}\text{I}_n$ , >20,000 mg/kg (rats) (204);



3400 mg/kg (rats) (203). The lower monoorganotin trihalides can present special problems, however, because of their facile reaction with moisture, resulting in the liberation of hydrochloric acid.

The toxicity of the tetraorganotins has been little studied. Available literature indicates that tetrabutyltin and the higher tetraalkyltins are substantially less toxic than triorganotins to mammals if taken orally (190). The high toxicity reported for tetraethyltin (LD<sub>50</sub> = 9–16 mg/kg) appears to be caused by its rapid conversion in the liver to a triethyltin species.

The inhalation toxicities (50% fatality in rats) of dimethyltin dichloride, monomethyltin trichloride, and dibutyltin dichloride are 1070, 600, and 73 mg/(L·h) (205).

The current OSHA TLV standard for exposure to all organotin compounds is 0.1 mg of organotin compounds (as tin)/m<sup>3</sup> air averaged over an 8-h work shift (206). NIOSH has recommended a permissible exposure limit of 0.1 mg/m<sup>3</sup> of tin averaged over a work shift of up to 10 h/d, 40 h/wk; ref. 207 should be consulted for more detailed information. Additional information on the health effects of organotin compounds is given in ref. 62.

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# HAZMAT WORLD

Hazardous Materials Management Issues. Technology and People

APRIL 1990

## NEWS & ANALYSIS

### WASHINGTON

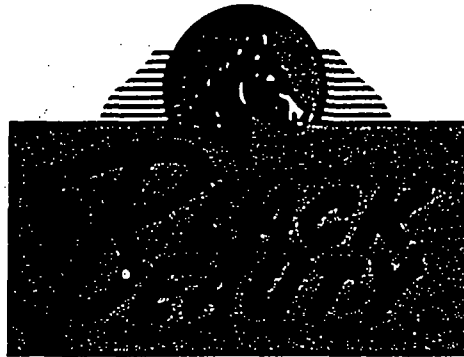
The rule restricting the use of Tributyltin (TBT) antifoulant paints became effective March 1. Restricted use classification limits sale of TBT paints to specially trained certified commercial applicators. Use also is limited to certified contractors or persons under their direct supervision. The classification does not apply to TBT paints packaged in spray cans containing a maximum 16 ounces and labeled solely for use on outboard motors, propellers and other non-hull underwater components. A manual prepared by the National Paint and Coatings Association in conjunction with TBT paint manufacturers recently was distributed to all states.

12 HAZMAT WORLD APRIL 1990

News and Analysis: Washington,

Hazmat World (April 1990), p. 12.

# REE \_\_\_\_\_ RALS



## COAL SLAG ABRASIVE MATERIAL

### Features

- ☐ Hard angular particles
- ☐ Uniform density
- ☐ Low friability
  
- ☐ Less than 1% free silica
- ☐ Chemically inert
- ☐ Passes California Title 22 (W.E.T.)
- ☐ Passes California Title 17 (CARB)
- ☐ Passes C.F.R. Title 40
  
- ☐ QPL Approved: MIL-A-22262A(SH)  
(selected certified plant locations)

### Benefits

**BLACK BEAUTY** offers a fast-cutting, low-dusting abrasive, tough enough to get the job done.

**BLACK BEAUTY** exceeds Federal and California standards, thereby enhancing worker safety and reducing costs associated with special waste-handling and worker liability insurance.

**BLACK BEAUTY** passes the newest and most technically advanced abrasive specifications available.



**BLACK BEAUTY 2040 at 40x**

# BLACK BEAUTY Coal Slag Abrasives

The product name **BLACK BEAUTY** refers to a by-product of the combustion of coal which is processed into abrasive products by Reed Minerals, a division of Harsco Corporation.

Typically, it is fused ferro-alumino-silicate of complex composition, formed when the molten slag is quenched in cold water. The quenching instantly solidifies the molten solution into an amorphous or non-crystalline glass, and by thermal shock, fractures the slag into rough, angular particles. The overall appearance of the material is that of a coarse, black aggregate.

Product Features which are beneficial for **BLACK BEAUTY** abrasive media:

- **High hardness** — Product ranges between 6 and 7 on the Moh's Scale of Mineral Hardness, and is characterized by low friability and low dusting, especially important on jobsites in congested areas or where emission containment is specified.
- **Angular particle shape** — Provides for excellent abrasive qualities; high productivity, surface cleanliness and surface profile.
- **Specific gravity** — Consistency of chemistry provides a consistent specific gravity.
- **Less than 1% free silica** — "High free silica" products have been found to increase the risk of silicosis. **BLACK BEAUTY** is classified as a "low free silica" abrasive and can be used where "low free silica" abrasives are specified.
- **Chemically stable** — is chemically inert and virtually non-leachable as demonstrated by independent laboratory testing.

## Plants and Sales Offices

GARY PLANT AND  
WAREHOUSE  
7100 W. 9th Avenue  
Gary, IN 46406  
219 944-6250

MEMPHIS *David Dewitt*  
2170 Plant Road  
P.O. Box 9454  
Memphis, TN 38109  
901 789-0700

CONCORD (Bow)  
River Road  
P.O. Box 556  
Concord, NH 03302  
603 224-4021

GALLIPOLIS  
State Rt. No. 7  
South of Kyger Creek  
Power Plant  
P.O. Box 371  
Cheshire, OH 45620  
614 367-7322

LA CYGNE  
600-800 Outer Drive  
P.O. Box 37  
La Cygne, KS 66040  
913 757-4561

MOUNDSVILLE  
Rt. 2  
P.O. Box 538  
Moundsville, WV 26041  
304 845-0211

KEARNY  
339 Central Avenue  
Kearny, NJ 07032  
201 589-4440

ROCKDALE  
At Alcoa Sandow Works  
P.O. Box 147  
Rockdale, TX 76567  
512 446-5805

SHELBURN  
1 Mile North of Rt. 48  
On U.S. Hwy. 41  
P.O. Box 67  
Shelburn, IN 47879  
812 397-2134

MOBILE  
240 Baldwin Road  
P.O. Box 639  
Satsuma, AL 36572  
205 675-6760

GREENVILLE  
State Rt. 176  
P.O. Box 182  
Drakesboro, KY 42337  
502 476-8020

TAMPA  
6050 Rt. 41 A South &  
Jensen Rd.  
P.O. Box 2308  
Gibsonton, FL 33534  
813 677-9168



# REED MINERALS

A Division of HARSCO Corporation

Home Office: 8149-C Kennedy Avenue, Highland, IN 46322

Telephone/Fax: 219 923-4200 or 312 221-0522

## REED MINERALS

## MATERIAL SAFETY DATA SHEET

(Complies with 29 CFR 1910.1200)

## SECTION I - GENERAL

Reed Minerals  
A Division of Harsco Corporation  
8149 C Kennedy Avenue  
Highland, IN 46322  
Emergency Telephone Number:  
(219) 923-4200

Product Name: Black Beauty®  
Abrasives  
CAS Number : 68476-96-0 \*  
Common Name : Boiler Slag  
Date : April 15, 1987  
Revised : August 1, 1988  
2nd Revision: September 1, 1989

## SECTION II - INGREDIENTS

\*Particulates not otherwise regulated.

Boiler Slag 100%  
(Typically as an amorphous  
mixture of Fe, Al, Ca silicates)

	OSHA *PEL	ACGIH *TLV
Nuisance Dust		
Total Dust : 15		10
Respirable Dust : 5		5

\*Values Expressed as mg/M<sup>3</sup>

## SECTION III - PHYSICAL DATA

Physical Form : Solid (angular granules)  
Boiling Temperature : N/A  
Melting Temperature : Greater than 2300°F  
Vapor Pressure/Density : N/A  
Evaporation Rate : N/A  
Specific Gravity : 2.7 g/cc (typical)  
Water Solubility : Negligible  
Color : Black  
Odor : None

## SECTION IV - FIRE AND EXPLOSION DATA

Product is non-flammable and non-explosive.

## SECTION V - REACTIVITY DATA

Product is stable under normal conditions of use, storage, and transportation.

**SECTION VI - HEALTH HAZARD DATA**

Low health risk by inhalation. Treat as a nuisance dust. Typical free silica less than 0.1%. Boiler slag is not a recognized carcinogen or cocarcinogen. Human toxic response has not been demonstrated for any route of entry. Mechanical irritation may occur to eyes, skin, or respiratory tract. Pre-existing health conditions may be aggravated.

Carcinogenicity: NTP - No; IARC Monographs - No; OSHA Regulated - No.  
**FIRST AID**

In case of:

1. Eye contact - Immediately flush eyes thoroughly with water.
2. Skin contact - Wash skin with soap and water if irritation occurs.
3. Inhalation - Remove affected person(s) to fresh air source.
4. Oral intake - Rinse mouth out with water.

If symptoms persist, contact a physician or other medical personnel.

**SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES**

No special procedures required for clean-up. Wetting with water will reduce airborne dust. Uncontaminated product does not exhibit characteristic EP Toxicity and may be disposed of as inert material in an appropriate solid waste landfill according to applicable Federal, State and Local regulations.

**SECTION VIII - CONTROL MEASURES**

Use appropriate NIOSH certified respiratory protection when exposure limits may be exceeded. Maintain sufficient ventilation to allow visual contact with work surfaces. Appropriate abrasive blaster's protective equipment is required, which may also include gloves, hood with protective lens, safety glasses, and hearing protection.

**SECTION IX - SPECIAL PRECAUTIONS**

Keep product dry and free of all contamination to assure free flow. Use an appropriate safety screen over fill hatch of blasting pot. Respirable dusts may be generated during pressure abrasive cleaning operations.

**- N O T E -**

The opinions expressed herein are those of qualified experts within Harsco Corporation. Harsco believes that the information contained herein is current and accurate for the normal and intended use of this product as of the date of this Material Safety Data Sheet. Since the use of this information and of those opinions or the conditions of use of the product are not within the control of Harsco Corporation, it is the user's obligation to determine and observe the conditions of safe use and disposal of the product by their operations.

(RM 8/88)

**COMMERCIAL TESTING & ENGINEERING CO.**

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (312) 953-9300

G. T. SKAR

ANALYTICAL ANALYSIS DIVISION

PLEASE ADDRESS ALL CORRESPONDENCE TO:  
490 ORCHARD ST., GOLDEN, CO 80401  
OFFICE TEL. (303) 278-9321

June 06, 1986

Commercial Testing and Engineering Company has conducted analyses on nine (9) Black Beauty product samples provided by Reed Minerals Division, Harsco Corporation. The submitted boiler slag products are characterized by the following table, in accordance with NIOSH P-CAM 173. Arsenic was determined by hydride generation AA. Beryllium, Cadmium and Lead were determined by flame AA spectrophotometry.

Table I  
(% Weight, as received)

Parameter	Range	Typical
Arsenic, As	$\leq 0.0001 - 0.0034$	0.0006
Beryllium, Be	$\leq 0.0002 - 0.0019$	0.0006
Cadmium, Cd	$\leq 0.0003 - \leq 0.0004$	$\leq 0.0004$
Lead, Pb	$\leq 0.0001 - \leq 0.002$	$\leq 0.002$

Gerald T. Skar  
Division Manager



Charter Member

**COMMERCIAL TESTING & ENGINEERING CO.**

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (312) 953-9300

G.T. SKAR

MINERAL ANALYSIS DIVISION

PLEASE ADDRESS ALL CORRESPONDENCE TO:  
480 ORCHARD ST., GOLDEN, CO 80401  
OFFICE TEL. (303) 278-8521

June 06, 1986

Commercial Testing and Engineering Company has conducted analyses on eleven (11) Black Beauty product samples provided by Reed Minerals Division, Harsco Corporation. The submitted boiler slag products are characterized by the following table, in accordance with ASTM D-3682 for mineral analysis.

Table I  
(% Weight, as received)

PARAMETER	RANGE	TYPICAL
*Silica, $\text{SiO}_2$	38.30 - 54.10	47.20
Alumina, $\text{Al}_2\text{O}_3$	15.71 - 24.28	21.39
Titania, $\text{TiO}_2$	0.80 - 1.20	1.01
Ferric Oxide, $\text{Fe}_2\text{O}_3$	8.58 - 32.28	19.23
Lime, $\text{CaO}$	2.84 - 16.80	6.80
Magnesia, $\text{MgO}$	0.67 - 4.68	1.47
Potassium Oxide, $\text{K}_2\text{O}$	0.70 - 2.05	1.60
Sodium Oxide, $\text{Na}_2\text{O}^{*-Z}$	0.32 - 1.42	0.62
Sulfur Trioxide, $\text{SO}_3$	0.03 - 1.70	0.62
Phosphorus Pentoxide, $\text{P}_2\text{O}_5$	0.03 - 0.35	0.09

\*Silica as reported above is total Silicon dioxide and may be characterized as an amorphous glass-like silicate matrix. This result should not be confused with free silica when determining workplace exposures. Actual free silica concentration for these materials is  $\leq 0.1\%$ .

Gerald T. Skar  
Division Manager



Charter Member

Reference 27

Richard Reddy  
Post Office Box 8167  
Savannah, GA 31412

February 14, 1983

Mr. Leonard Ledbetter  
Director  
Georgia Department of Natural Resources  
229 Washington Street, S.W.  
Atlanta, Georgia 30334

RE: APPLICATION FOR DREDGE PERMITS  
LATEX CONSTRUCTION COMPANY  
07407N004452

Dear Mr. Ledbetter:

On February 6, 1983, samples of water and sediment were taken in the marsh and waterways around the perimeter of the current Latex Construction site and at two locations outside the Latex impact area. At the present time, we have evaluated the sediment for lead and will have the results for the remaining heavy metals in the sediment and water next week.

In summary, we found elevated lead levels as high as 865 PPM in Williamson Creek adjacent to the Latex facility. We found lead levels of 19-22 PPM at two locations outside of the Latex impact area.

It is evident from the data developed thus far that lead, and possibly other heavy metals, are obviously being discharged from the present Latex facilities into our marshlands and waterways. A lead level that is 43 times higher in the sediments at the Latex site than was found in the surrounding marsh, "provides the potential to release poisons into other parts of the marsh system," according to Dr. Eugene Odum, Director of the Institute of Ecology at the University of Georgia.

This potential is dramatically increased if the mouth of Williamson Creek is dredged and its course changed. The dredging and erosion associated with altering the mouth of the Williamson, as well as the increased water traffic in the area, will accelerate the advance of a serious existing problem.

It is my understanding that Latex does not have a permit to discharge elevated levels of heavy metals into the wetlands. Therefore, I request that you investigate whether this discharge is legal or illegal. I also request that you investigate the lead and heavy metal content in the fish and grass in the Williamson Creek area.

Mr. Leonard Ledbetter  
February 14, 1983  
Page two

Please contact me when you have determined the legality of the discharge and regarding the nature of further testing. I would like to thank you in advance for your assistance and cooperation.

Sincerely,

*Richard Reddy*

Richard Reddy  
For Friends of the Wilmington River

P.S. I will send you the rest of our results when we have completed the lab work.

cc: Lee Tebo  
Chief of Survey & Analysis Division  
Environmental Protection Agency

Glen McBay  
Georgia Fish and Wildlife

Tom Tomasello  
National Wildlife Federation

Manley Fuller  
Carolina Wetlands

Honorable Zell Miller  
Lt. Governor  
State of Georgia

Steven Osvald  
Savannah District, Army Corps of Engineers

Wally Davis  
Savannah News-Press

Dr. Eugene Odum  
Director, Institute of Ecology  
University of Georgia

James Tripp  
Environmental Defense Fund

Jim Elder  
Sierra Club

Dr. Lundquist  
Chatham County Health Department

Joe D. Tanner  
Commissioner  
Department of Natural Resources

Mr. Leonard Ledbetter  
February 14, 1983  
Page three

cc: Brock Evans  
National Audubon Society

Dr. Frank E. Carlton  
Savannah, Georgia

Senator Ernest Hollings  
United States Senate

Senator Sam Nunn  
United States Senate

Senator Mack Mattingly  
United States Senate

Herb Windham  
Skidaway Institute

Delano Dean  
President, Georgia Wildlife

Jim Drewry  
Senate Commerce Committee

Ogden Doremus

Rick Middleton  
Sierra Club Defense Fund

Dr. Cedric Stratton  
Armstrong State College

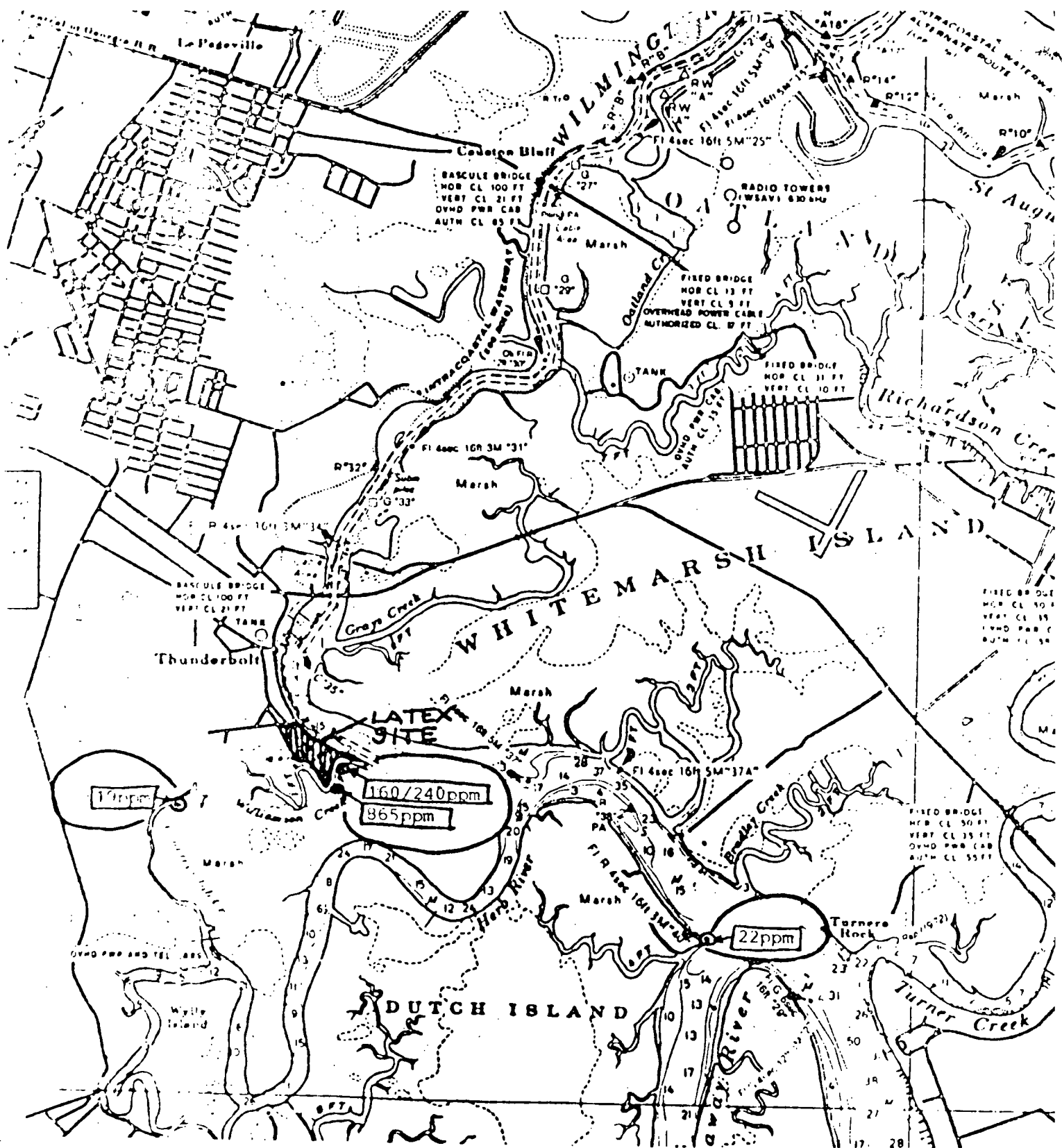
Colonel Charles E. Dominy  
Army Corps of Engineers  
Savannah District

Elizabeth Phillips  
U.S. Environment Protection Agency

Randall P. Cheek  
U.S. Environmental Protection Agency

Dr. Frederick C. Marland  
Department of Natural Resources

Ken Hinman  
National Coalition for Marine Conservation



LEAD CONCENTRATION IN SEDIMENT (parts per million)  
Core samples taken from four locations

Wilmington River, Country Club Creek and Williamson Creek  
Chatham County, Savannah/Thunderbolt, Georgia

Richard Reddy  
Post Office Box 8167  
Savannah, GA 31412

February 22, 1983

Mr. Leonard Ledbetter  
Director  
Georgia Department of Natural Resources  
270 Washington Street, S.W.  
Atlanta, Georgia 30334

RE: APPLICATION FOR DREDGE PERMITS  
LATEX CONSTRUCTION COMPANY  
07407N004452

Dear Mr. Ledbetter:

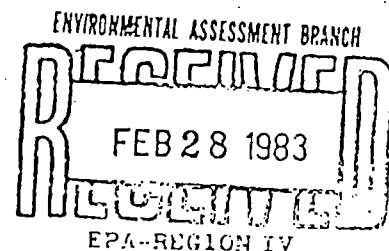
Each year, as much as 300,000 acres of wetlands in the United States are destroyed or altered in the name of progress. In fact, we have surrendered 40% of the Continental U.S. marshlands to developers, crops, marinas, waste dumps and other human enterprises. Twenty-five percent of the remaining wetlands in the U.S. are located in Georgia and Georgia's 425,000 acres of marsh total 50% of the wetlands in the Southeast.

This marshland and river system is three times as productive as the richest Iowa cornfield: It provides the nursery for almost all of our seafood and it plays a major role in the final treatment of our municipal effluent. As an effluent treatment system, it has been valued at \$14,000 per acre.

Our concern over the rate of wetlands destruction and encroachment has lead us to undertake an aggressive stand to protect this vital, fragile, resource.

It is due to our awareness of this diminishing resource that we have conducted sediment testing along the perimeter of the Latex Construction site and two locations outside of the Latex impact area. Analysis of the sediment in Williamson Creek, adjacent to Latex, indicates that Latex is discharging toxic wastes and pesticides, from a point source, into the creek and marsh.

In summary, we found the heavy metal content of the sediment in Williamson Creek to contain lead as high as 865 PPM, copper as high as 640 PPM and zinc as high as 2600 PPM. Outside of the Latex impact area, the levels of lead, copper and zinc were 19, 6.6 and 35 PPM respectively. The lead level in the Savannah River sediment, considered by many to be polluted, as compared to the Wilmington River, was only 28 PPM adjacent to River Street.



Leonard Ledbetter  
February 22, 1983  
Page three

Our marshes are integral to our economy and life style and they are our children's heritage...we respectfully ask you to exercise your authority to enforce the federal regulations that were enacted to protect them.

Thank you for your consideration and your review of our data. Please contact me within ten days with your action plan.

Sincerely,

*Richard Reddy*

Richard Reddy  
For the Friends of the Wilmington River

cc: Fred S. Clark  
Chatham County Attorney

Bill Stevenson  
Chatham County Commissioner

Edward Booth, Esq.  
Assistant U.S. Attorney

William McAbee  
Assistant U.S. Attorney

Lee Tebo  
Chief of Survey & Analysis Division  
Environmental Protection Agency

Glen McKay  
Georgia Fish and Wildlife

Manley Fuller  
Carolina Wetlands

Honorable Zell Miller  
Lt. Governor  
State of Georgia

Steven Osvald  
Savannah District, Army Corps of Engineers

Wally Davis  
Savannah News-Press

Dr. Eugene Odum  
Director, Institute of Ecology  
University of Georgia

James Tripp  
Environmental Defense Fund

Jim Elder  
Sierra Club

Dr. Lundquist  
Chatham County Health Department

Joe D. Tanner  
Department of Natural Resources

Brock Evans  
National Audobon Society

Senator Ernest Hollings  
United States Senate

Senator Sam Nunn  
United States Senate

Leonard Ledbetter  
February 22, 1983  
Page four

cc: Senator Mack Mattingly  
United States Senate

Herb Windham  
Skidaway Institute

Delano Dean  
President, Georgia Wildlife

Jim Drewry  
Senate Commerce Committee

Ogden Doremus

Rick Middleton  
Sierra Club Defense Fund

Dr. Cedric Stratton  
Armstrong State College

Col. Charles E. Dominy  
Army Corps of Engineers  
Savannah District

Elizabeth Phillips  
U.S. Environmental Protection Agency

Randall P. Cheek  
~~U.S. Environmental Protection Agency~~ NIMFS

Dr. Frederick C. Marland  
Department of Natural Resources

Ken Hinman  
National Coalition for Marine Conservation

Dr. Frank E. Carlton  
Savannah, Georgia

*He covered the waterfront!*

HEAVY METAL CONCENTRATION IN SEDIMENTS

Sample Location (See Map)

<u>Metal</u>	<u>1</u>	<u>1,</u>	<u>2</u>	<u>2,</u>	<u>3,</u>	<u>4,</u>
Pb, PPM		865	160	240	22	19
Cu, PPM	68	640	110	180	11	6.6
Zn, PPM	920	2600	310	410	57	35
AL%	7.8	4.3	5.0	2.1	8.4	5.9
Pb:AL		201	32	114	2.6	3.2
Cu:AL	8.7	148.8	22	85.7	1.3	1.1
Zn:AL	117.9	604.6	62	195.2	6.8	5.9

Within Latex Impact Area

Outside Latex  
Impact Area



Richard Reddy  
Post Office Box 8167  
Savannah, Georgia 31412

March 7, 1983

Mr. Joe Tanner  
Commissioner  
Department of Natural Resources  
Environmental Protection Division  
270 Washington Street, S.W.  
Atlanta, Georgia 30334

VIA CERTIFIED MAIL

Dear Mr. Tanner:

On February 6, 1983 I took sediment samples along the perimeter of Latex Construction Company in Williamson Creek and at two other locations in the marsh outside the Latex impact area.

These samples were analyzed by Skidaway Oceanographic Institute for heavy metals and it was found that the level of copper, lead and zinc were 50-74 times higher within the impact area than outside of this area.

I was informed that the copper came from marine anti-foulant paint which is considered a pesticide by the EPA. I was also informed that in order to dump materials containing these toxins into the marsh, a permit was required and that Latex does not have such a permit.

I wrote Mr. J. Leonard Ledbetter, Director of the Georgia Department of Natural Resources, on two occasions (see enclosures) and called him last week. I realize that he is very busy but I believe that the significance of our findings warrants immediate attention. It appears that there are Federal Regulations that are being violated and that your agency is charged with enforcement of these regulations. I am sure you are aware of the effect that high concentrations of heavy metals can have on marine organisms and the people that eat them.

Not only have I been unable to obtain an action plan from your agency to stop the discharge and clean up the affected area, I find that the situation is compounded by Latex's proposed expansion program.

Latex has received Georgia Coastal Marshland Protection Committee and Water Quality permits from your agency to widen, alter the course of and dredge the mouth of Williamson Creek. The heavy metal deposition begins about 100 feet up stream from the mouth of this creek.

Expert testimony before Department of Natural Resources Administrative Law Judge James Talley states that if this expansion program is carried out, the sediments in Williamson Creek are subject to erosion and will tend to fill in the dredged area requiring a dredge maintenance program.

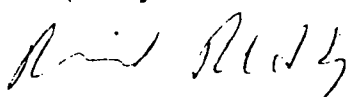
Mr. Joe Tanner  
March 7, 1983  
Page two

Without intervention from your agency or from legal action against your agency and Latex, it is reasonable to assume Latex will continue to discharge this material. It is also evident that this toxic waste will move into a larger area of the marsh and river system.

As your agency is charged with policing violations of this nature and requiring its cessation and clean-up, I am asking that you take immediate action.

Please contact me by return mail regarding a proposed action plan. I would like to thank you in advance for your prompt attention in this matter. If you have any questions, please contact me.

Sincerely,



Richard Reddy  
For the Friends of the Wilmington River

Enclosures

cc: Brooks Stillwell  
Attorney at Law  
Hunter, Maclean, Exley & Dunn, P.C.

Don Harper  
Attorney at Law  
Adams, Gardner, Ellis & Inglesby

Ogden Doremus  
Attorney at Law  
Doremus & Jones

Stanley Karsman  
Attorney at Law  
Karsmen, Brooks

Honorable Joe Frank Harris  
Governor, State of Georgia

J. Leonard Ledbetter  
Georgia Department of Natural Resources

Honorable Ernest F. Hollings  
United States Senate

Honorable Lindsay Thomas  
United States House of Representatives

Honorable Mack Mattingly  
United States Senate

Honorable Sam Nunn  
United States Senate

Honorable Bobby Phillips  
Georgia State House of Representatives

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IV - ATLANTA, GEORGIA 30365

DATE: MAR 7 1983

SUBJECT: Latex Construction Company Section 10/404 Permit  
(Letter from Richard Reddy to Leonard Ledbetter,  
dated February 22, 1983)

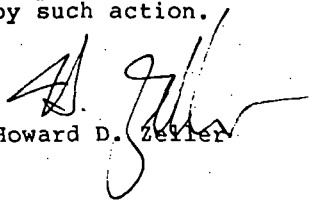
FROM: Assistant Regional Administrator  
for Policy and Management

TO: Paul Traina, Director  
Water Management Division

Thomas Devine, Director ✓  
Air & Waste Management Division

I am forwarding for your information and possible action a copy of a letter we have received in reference to a proposed project for which an Army Corps of Engineers Section 10/404 permit has been requested. Latex Construction Company is proposing to expand their existing boat repair facility on the Wilmington River near Savannah, Georgia. This project has attracted a lot of public interest and local opposition and could easily escalate to the extent that EPA may become involved because of concern regarding hazardous materials entering waters of the U.S. I will also forward to you a copy of the Georgia DNR response to Mr. Reddy's letter if and when we receive one.

If either of you initiates any action regarding this matter, I would appreciate your copying Mr. E.T. Heinen since the Corp's decision on the Section 10/404 permit may be affected by such action.

  
Howard D. Zeller

Reference 31

RIENDS OF THE WILMINGTON RIVER  
Post Office Box 8167  
Savannah, Georgia 31412

March 10, 1983

Mr. Wayne Mathes  
Chief, Site Screening and Engineering Section  
Environmental Protection Agency  
Region 4  
345 Courtland Street  
Atlanta, Georgia 30365

Dear Wayne:

Pursuant to our conversation, enclosed please find copies of the letters and data that we discussed yesterday.

As I mentioned we have accumulated data that leads us to believe Latex Construction Company is responsible for the placement of lead and copper based paints from their spray painting/sandblasting operations into Williamson Creek and the marsh.

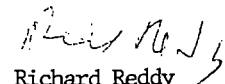
The high heavy metal concentrations that we found in the sediment will tend to migrate if the mouth of Williamson Creek is altered consistent with Latex's proposed expansion plans.

I asked the Department of Natural Resources to survey the limits of the affected area, require its clean-up, prevent its re-occurrence and suspend their recently issued permits allowing the Latex expansion, pending the assessment and clean-up. To date I have received no responses.

The materials we found are considered toxic substances. The area where they presently lie and the area where the actual painting/sandblasting takes place may well be within the guidelines of an unlicensed toxic dump site.

Please review this information and contact me with your recommendations. Thank you.

Sincerely,



Richard Reddy  
For the Friends of the Wilmington River

Enclosure

Att. Conditio P 33 A  
3-24-83  
LATEX Engineering Co.  
**Dredging plan  
for small spit of  
marsh opposed**

By Bob Harrell

Staff Writer

A spit of marsh land — one-third of an acre that juts out just enough to force Williamson Creek to curve sharply as it joins the pristine Wilmington River near the town of Thunderbolt — could become a battleground.

"Friends of the Wilmington River," a conservation group supported by newspaper publisher Charles H. Morris, is mounting a drive to prevent the Latex Construction Co. from dredging the property to improve launching facilities at its barge-building plant at Thunderbolt, just east of Savannah.

The protest group contends that the tiny slice of marsh — .36 of an acre, to be exact — acts as a barrier preventing lead and other toxic materials found in the sediment of Williamson Creek from washing into the river. The group also contends that Latex is responsible for the toxic discharges into the creek.

Latex already has won approval for its plan from the Coastal Marshland's Protection Committee, an agency of the Department of Natural Resources, but now must make its case again before a hearing officer, on the appeal generated by Morris and his group.

Latex Chairman W. E. Honey said the protest is being financed and directed by some of the owners of Sylvan Island, located less than a mile from the company.

"This thing has been blown way out of proportion. Reasonable men can settle their differences by sitting down together and talking, but these men have never come to see me."

Honey said that more than 30 acres of marsh land were destroyed to build a causeway to Sylvan Island, where Morris lives on an eight-acre estate.

"As someone has said, 'It is easy to suddenly become an environmentalist after you have already filled all the marsh that you need for your purposes,'" Honey said.

Morris, along with Richard Reddy, of Reddy International Chemical Corp. and Ralph Maggioni of the seafood packing firm E. P. Maggioni and Co., all of Savannah, were in Atlanta Wednesday seeking help from state and federal environmental organizations.

At the state Department of Natural Resources, they won a pledge from Commissioner Joe Tanner that the state would investigate their charges that the Latex shipyard had been dumping heavy metals into Williamson Creek.

Reddy, hired by Morris to gather evidence of toxic waste in the creek, told Tanner that he found extreme concentrations of lead, copper and zinc in the sediment of Williamson Creek, allegedly from paints sand-blasted off barges and ships at the plant.

He said he informed the state Environmental Protection Division in February, "but no action has been forthcoming."

"The problem is complicated," Tanner said, "because two sets of laws are involved: Coastal Marshlands regulations and water quality, the latter coming under EPD. I have every confidence in (EPD Director) Leonard Ledbetter and his staff that they will handle the latter, while the hearing officer will determine the outcome of the marsh lands question."

SPARKMAN, HARRIS & MOORE

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CHARLES L. SPARKMAN  
STANLEY E. HARRIS, JR.  
WILLIAM T. MOORE, JR.

TELEPHONE  
(912) 236-1321

March 25, 1983

Colonel Charles E. Dominy  
District Engineer  
Department of the Army  
Savannah District Corps of Engineers  
Post Office Box 889  
Savannah, Georgia 31402

Re: Latex Construction Company  
Application No. 074 OYN 004452

Dear Colonel Dominy:

Please accept this letter as a Supplemental Statement of Latex Construction Company in response to the opponents' objections to the above application as voiced by them through various letters and reports of Mr. Richard Reddy concerning sediment samples taken in Williamson Creek and the Wilmington River.

We would like to make the following response to the accusation by Mr. Richard Reddy, The Friends of the Wilmington River, and others, that Latex Construction Company is "discharging" toxic heavy metals into Williamson Creek.

To begin with, the sites on Williamson Creek where Mr. Reddy supposedly took the sediment samples which were reported to contain high levels of copper, lead and zinc are not in the area that Latex proposes to dredge under the above application. The proposed dredge material is still silt made up of fine sands with little organic matter as described in the test report of Savannah Laboratories & Environmental Services, Inc. as shown in Latex's Environmental Supplement of October, 1982.

We have previously submitted to the Corps of Engineers an Environmental Supplement which included a chemical description of the material that is proposed to be dredged along with recommendations as to the impact of the dredging of these materials on the environment in both the dredging and disposal areas. This evaluation of the material to be dredged was made by an environmental consulting firm [Savannah Laboratories & Environmental

25 MAR 1983

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Services, Inc.) with recognized expertise in the affects of dredging on the environment.

In summary, this Environmental Supplement indicated that the material to be dredged contained very low levels of the three metals in question [copper, lead and zinc], and results from the standard elutriate test indicate that the dredging of this material should have little effect on the trace metal levels of the surrounding or disposal area waters.

We would like to point out that most of the material to be dredged is not recently deposited sediments which have been contaminated by man, but [with the exception of the top inch or two] are undisturbed pristine sediments which are predominately fine sands containing little organic matter. Such sediments contain lower levels of heavy metals than recently deposited silts such as those found in river bottoms or basins.

Even though Latex contends that the accusations by Mr. Reddy and Friends of the Wilmington River have little or no bearing on this proposed application; nevertheless, we are concerned that someone would accuse Latex of polluting the environment with copper, lead and zinc. Since we were not aware of any activities at Latex which may contaminate the surrounding streams, we felt it necessary to determine if in fact the sediments in the streams surrounding Latex Construction Company contained elevated levels of heavy metals. Therefore, we requested that an unbiased agency, the Marine Extension Service of the University of Georgia on Skidaway Island, study the levels of copper, lead and zinc in the sediment of streams in the Thunderbolt area. The Marine Extension Service agreed to do the study provided that (1) they select the sampling sites as well as the sampling methods and handling techniques, and (2) all results of analysis would be in the public domain.

The attached report [Exhibit No. 1] explains the sampling, analytical procedures and the results from the study by the Marine Extension Service-University of Georgia. Samples were taken on the morning of February 25, 1983 by a sample team headed by Dr. James Harding of the Marine Extension Service and were delivered to the geochemical laboratory at Skidaway Institute of Oceanography for analysis of the copper, lead and zinc content by atomic absorption spectroscopy. Additional samples of the same sediments were sent to the Center for Applied Isotope Studies at the River Bend Research Laboratories of the University of Georgia

for comparative analysis for the same metals by x-ray flourescent techniques.

We would like to make the following comments concerning these results from the Marine Extension Service study:

1. In general, the results obtained by the University of Georgia's River Bend Research Laboratories and the Skidaway Institute of Oceanography's geochemical laboratory were similar. The lowest copper, ① lead and zinc concentrations were found in samples taken from the Thunderbolt side of the mouth of the Williamson Creek which is adjacent to the area proposed to be dredged. Higher levels of copper, lead and zinc were obtained from samples taken from the sediments on the south bank of the Wilmington River downstream from Williamson Creek juncture and in Williamson Creek adjacent to the Latex paint shop. However, the highest copper, lead and zinc concentrations were found in samples taken directly beneath the Highway 80 bridge which is far removed from Latex Construction Company.
2. The sample taken by the Marine Extension Service at the site adjacent to the proposed dredging area contained higher levels of metals than the composite sample of the proposed dredge material [reported in the Environmental Supplement of October 1982]. This difference, according to Savannah Laboratories, is most likely due to the fact that samples taken of the proposed dredged material were auger samples which obtained sediments from greater depths than the sample taken by the Marine Extension Service team. Also the sediment sample taken by the Marine Extension Service was from the river bottom adjacent to the mouth of the Williamson Creek; whereas, the sample of the proposed dredge material was a composite of the top of 30 cm of the whole proposed dredging area. The river bottom sample taken by the Marine Extension Service was more than likely recently deposited silt which is not representative of the material proposed for dredging [fine sands with little organic matter].

3. { In general, according to Savannah Laboratories, the copper, lead and zinc levels found in all the samples by the Marine Extension Service-University of Georgia study were within the normal ranges which have been reported from several studies of Savannah River sediments. They are also within the range of results obtained from sediment analysis in the lower St. Johns River [Jacksonville area], the Tampa Bay area, and Pensacola Bay area. We are attaching tables [Exhibits Nos. 2, 3, 4 and 5] from several reports which show metal contents in sediment measurements taken within the last couple of years from the above mentioned sites. The source of each report is noted on the attachment.
4. { Results from this unbiased study conducted by scientists from the University of Georgia clearly indicate that there is not a copper, lead or zinc contamination problem in the Latex area. The fact that the University of Georgia study indicated that the highest level of these metals were in sediments at the sampling site farthest away from the Latex facility [under the Highway 80 bridge] supports our belief that Latex is not contaminating the environment.

Since we know little about the sampling methods used or the possibilities for contamination or the qualifications of the individuals taking the samples for the Reddy Study, we are not able to comment on why the Reddy Study reported much higher levels of these metals in the Thunderbolt area. Except, we do seriously question the education, background and training in analytical laboratory sampling techniques and sampling methods which would qualify Mr. Reddy to conduct the sampling and render any opinions thereon.

This is now the third time in the process of this application that we have had sediment samples in the vicinity of the Latex operation taken and analysed by recognized laboratory personnel and facilities, and test results of these samplings are markedly different from those of Mr. Reddy.

Colonel Charles E. Dominy  
Page Five

We hope that this report will clear the confusion created by those who are accusing Latex Construction Company of polluting the environment.

Very truly yours,

  
William T. Moore, Jr.  
For the Firm

WTM,Jr:jb

cc: Mr. Steven Osvald

## Sediment Sampling of Williamson Creek and Wilmington River

### Introduction

On February 24, 1983, the Marine Extension Service on Skidaway Island was contacted by Mr. W. E. Honey of Latex Construction Company, Thunderbolt, Georgia inquiring into the possibility of Marine Extension personnel taking sediment samples in Williamson Creek adjacent to the Latex site and having said samples analyzed for copper, lead and zinc content.

In acquiescing to this request, the Marine Extension Service placed the following conditions on this involvement: (1) that they select the sampling sites, as well as sampling methods and handling techniques and that (2) all results of the analyses will be in the public domain. Mr. Honey agreed to these conditions.

### Sampling & Handling

On the morning of February 25th, a sampling team consisting of James Harding, David Miller and Peter Schlein departed via boat for Williamson Creek. Prior to leaving the dock on Skidaway Island, special plastic vials were obtained from the Skidaway Institute's geochemical laboratory to contain portions of the samples that would be submitted to that laboratory for analysis. Clean, unused glass bottles with plastic caps were also carried into the field for additional sample containers.

Four sample sites were selected (see Figure I). Sample No. 1 was taken at the end of the marshy "spit" which trends parallel to the flow of the Wilmington River, but on the Williamson Creek side, opposite the "No Wake" sign, and in two feet of water. Sample No. 2 was taken from the westbank of Williamson Creek,

approximately 75 feet from the northwest corner of the Latex Paint-Shop and under 1.5 feet of water at the time of sampling. Sample No. 3 was obtained from the south bank of the Wilmington River, downstream from its juncture with Williamson Creek, and directly opposite Channel Marker "36". Sample No. 4 was taken near the western bank of the Wilmington River, directly beneath the Highway 80 bridge. Samples 3&4 were both obtained in two feet of water.

The sampling tool used was constructed entirely of stainless steel, and was a hand-operated grab sampler similar in construction to a post-hole digger, except that the mud sample obtained was 10x6 inches in size.

Following successful penetration of the sampler into the bottom material, it was brought on board the boat, whereupon the plastic vials supplied by the Skidaway Laboratory were jammed into the middle of the sample container and filled with mud, capped tightly, washed off and numbered. Following this procedure, the glass bottles (200 ml capacity) were filled with mud from the center of the sampler, capped, washed and numbered. This procedure was identical at each sample site, and the sampler itself was washed thoroughly after each sample site so as not to contaminate one sample with sediments from another.

Upon return to the Skidaway Island dock, the sample vials were carried directly to the geochemical laboratory and submitted to the chief technician.

The remainder of the samples (those in glass bottles) were taken to the Marine Extension laboratory, uncapped and placed in a convection oven, and dried for 72 hours, with the temperature set at 120°F so as not to drive off molecular water bound within the matrixes of the clay minerals.

On Monday, February 28th, these dried samples were transferred to clean plastic vials, capped tightly, taped and packed for shipment via Express Mail to the Center for Applied Isotope Studies, Riverbend Research Laboratories at the University of Georgia for analysis by the X-Ray Fluorescence method.

Results of Analyses

X-Ray Fluorescence

<u>Sample No.</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>
1	11.9	16.5	35.9
2	39.7	26.6	98.3
3	48.7	35.1	105.3
4	94.9	386.8	119.0

Instrument used:

Phillips PW 1410 XRF Spectrometer

Standards used:

- 1) National Bureau of Standards SRM 1646 - Estuarine sediment
- 2) Geological Survey of Canada SY3 - Bancroft area, Eastern Ontario

Relative Standard Deviation:  $\pm 4\%$

Skidaway Institute

<u>Sample No.</u>	<u>Cu (ppm)</u>	<u>Pb (ppm)</u>	<u>Zn (ppm)</u>
1	16	29	55
2	42	49	130
3	31	37	100
4	96	77	140

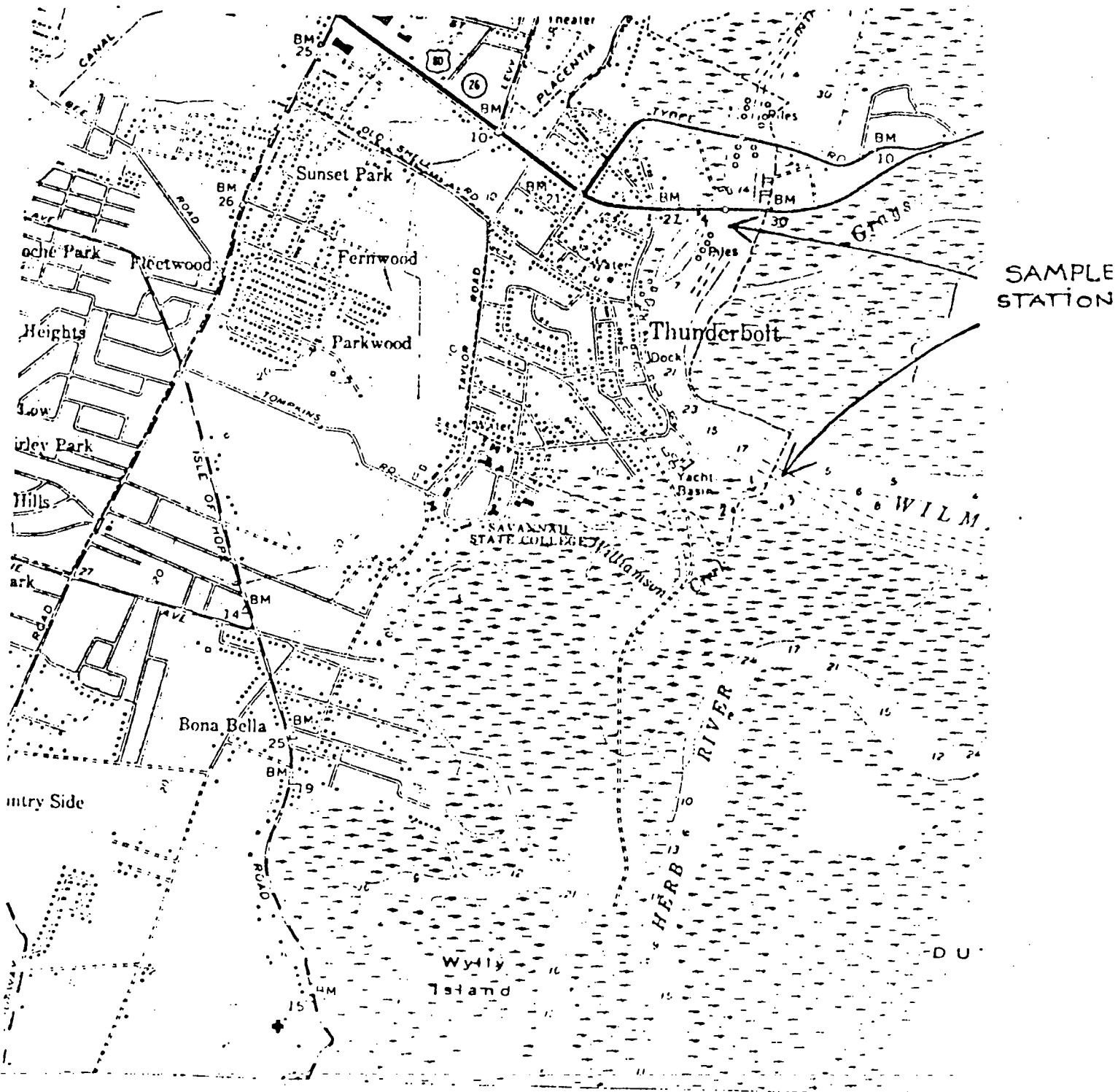


Figure 1

FRIENDS OF THE WILMINGTON RIVER  
POST OFFICE BOX 8167  
SAVANNAH, GEORGIA 31412

March 30, 1983

Colonel Charles E. Dominy  
District Engineer  
Savannah District  
Department of the Army  
Corps of Engineers  
Post Office Box 889  
Savannah, Georgia 31402

RE: W. T. Moore, Jr.'s letter of March 25, 1983, to Colonel Dominy

Dear Colonel Dominy:

Please accept this statement as a clarification of the above referenced letter.

Mr. Moore indicated that the Friends of the Wilmington River and I have made "accusations" that Latex is discharging heavy metals into Williamson Creek. We made no accusations, we merely reported the results of sediment analysis taken from two locations in the creek where heavy metals are entering. As this entry appears to be through a "discrete conveyence," this discharge would require an NPDES permit.

Mr. Moore is accurate when he stated that these heavy metal deposits in Williamson Creek are not located in the proposed dredge area. However, they are close enough to it to be affected by the proposed dredge action. The statement that the proposed dredge sediment is "still silt made up of fine sands with little organic matter" is not relevant as heavy metals are inorganic complexes, not organic.

Mr. Moore is accurate when he says that the material to be dredged would have little effect on the disposal area waters based upon the standard elutriate tests developed for his Environmental Supplement. But he is inaccurate when he says that the results from that test indicate that there would be little effect on the "surrounding...waters." His elutriate test used sediment from the dredge site, and did not sample the sediment in the areas of Williamson Creek where we found this high concentration of heavy metals.

We have no reason to question his results on the sediment in this area to be dredged, but we do question what will happen to the heavy metal-laden sediment in Williamson Creek if this area is dredged.

Mr. Moore states that "we are not aware of any activities at Latex which may contaminate the surrounding streams." Mr. Moore is aware that Latex sandblasts and spray paints on the bank of Williamson Creek as this was admitted in the DNR hearing.

Mr. Moore concludes that "results from this unbiased study...indicate that there is not a...contamination problem in the Latex area." This is an erroneous conclusion as the University of Georgia did not take sediment from the same locations as we did. Unless sediment was taken from the same locations as ours, the results of their tests cannot be compared with ours. We found two discrete conveyances leading from the Latex property and it was at the mouth of these conveyances that we discovered the heavy metal contamination.

It is apparent that toxicants are entering the creek through these conveyances and, due to the tremendous flushing and dilution factors found in tidal creeks, any heavy metals that are transported become diluted and dispersed. The material that is not transported, however, has remained in pockets adjacent to the point source, as our results have shown.

Mr. Moore states that "however, the highest copper, lead, and zinc concentrations were found in samples taken directly beneath the Highway 80 bridge which is far removed from Latex construction." This statement insinuates that Highway 80 is the source of a significantly higher concentration of heavy metals than Mr. Moore found at his sampling point adjacent to Latex and this is not quite true. According to EPA studies conducted adjacent to highways in Florida, one would expect to find an elevated heavy metal concentration near a thoroughfare, however, the level is only slightly higher.

In point of fact, all four sample locations chosen by the University of Georgia are merely "background" sites as indicated by the aluminum-to-heavy-metal ratio. The "highest level of these metals" found at the bridge is barely higher than what would be considered a natural occurrence and well within the same order of magnitude of a background concentration.

Heavy metals are naturally occurring in the earth's crust in various concentrations. The method used to determine if a certain localized concentration is natural or bears the impact of man's influence is by determining the percent of aluminum at each site and then developing a ratio of the aluminum to the heavy metal. This ratio for the four sites quoted in Mr. Moore's letter ranged from 4.10 to 21.0 -- ratios that indicate little, if any, impact by man.

Our ratios developed for the sites outside the Latex impact area were consistent with Mr. Moore's: 1.1 to 6.8 -- easily within the background range. However, at the mouth of the two point sources, the ratios we found were as high as 604.6, indicating that a substantial impact by a man-made phenomenon occurred.

Mr. Moore stated that "we know little about the sampling methods used...for the Reddy study." How can this be? A sworn affidavit outlining our methods and techniques was sent to him several weeks ago and a copy of it is contained in the Corps' files and open to the public.

Mr. Moore questions my education, background, and training. I have been in the proprietary chemical business for 13 years and have formulated, manufactured, and sold water and effluent treatment chemicals as well as deposit-control programs on three continents. I am currently the president of a chemical company and have several patents. I would question Mr. Moore's background, education, and training that would qualify him to render opinions and draw conclusions regarding chemical and scientific matters.

If Latex desires to challenge the results we have developed, then the testing must be conducted at the same point sources we used. When we sampled outside the influence of these point sources, we considered the data developed "background data" and the aluminum ratios supported this. When Mr. Moore sampled outside the influence of the point sources, he did not consider his data "background data," however, his aluminum ratios indicated that his data was indeed background. We cannot compare apples and oranges.

Mr. Moore attaches exhibit number two to his letter of data taken from the Savannah River. Please bear in mind that the Savannah River is dredged routinely and the Williamson Creek is not. This would have an effect on the metal accumulation found in the Savannah River.

In summary, Mr. Moore's data and conclusions only indicate that there was no point source discharge of heavy metals occurring in the locations of his sampling. His data cannot conclude that there is no point source discharge of heavy metals occurring in Williamson Creek as he tested in areas removed from the immediate effects of the discharges we found. The results of his testing are consistent with our findings for background data but cannot be compared with the results of the data we found within the point source impact area.

We would like to extend the same offer to your agency as we have extended to the EPA and the DNR: At your convenience, we would be happy to take your personnel to the site and show you the discrete conveyances we found. Please let me know when you would like to accompany us. Thank you for your continuing consideration.

Very truly yours,

  
Richard Reddy

na

# HEAVY METAL CONCENTRATION IN SEDIMENTS

## Sample Location Parts per 1,000,000

### Reddy Study

<u>Metal</u>	<u>1</u>	<u>1,</u>	<u>2</u>	<u>2,</u>	<u>3,</u>	<u>4,</u>
Pb, PPM		865	160	240	22	19
Cu, PPM	68	640	110	180	11	6.6
Zn, PPM	920	2600	310	410	57	35
AL%	7.8	4.3	5.0	2.1	8.4	5.9
Pb:AL		201	32	114	2.6	3.2
Cu:AL	8.7	148.8	22	85.7	1.3	1.1
Zn:AL	117.9	604.6	62	195.2	6.8	5.9

Within Latex Impact Area

Background  
Area

### Latex Study

<u>Metal</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Pb, PPM	29	49	37	77
Cu, PPM	16	42	31	96
Zn, PPM	55	130	100	190
AL%	3.8	6.1	8.9	10
Pb:AL	7.6	8.0	4.1	7.7
Cu:AL	4.2	6.8	3.5	9.6
Zn:AL	14.7	21.3	11.2	14

# HEAVY METAL CONCENTRATION IN SEDIMENTS

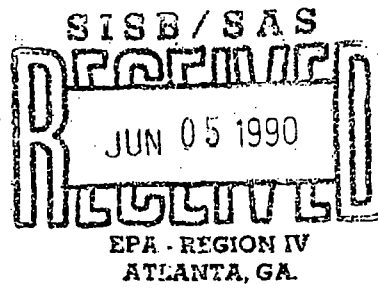
Sample Location (See Map) *Auto per 1,000,000*

<u>Metal</u>	<u>1</u>	<u>1.</u>	<u>2</u>	<u>2.</u>	<u>3.</u>	<u>4.</u>
Pb, PPM		865	160	240	22	19
Cu, PPM	68	640	110	180	11	6.6
Zn, PPM	920	2600	310	410	57	35
AL%	7.8	4.3	5.0	2.1	8.4	5.9
Pb:AL		201	32	114	2.6	3.2
Cu:AL	8.7	148.8	22	85.7	1.3	1.1
Zn:AL	117.9	604.6	62	195.2	6.8	5.9

Within Latex Impact Area

Outside Latex  
Impact Area

COMPL.  
ENG.



R-586-6-0-1

FINAL  
SCREENING SITE INSPECTION, PHASE II  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA  
EPA ID #: GAD980803696

Prepared Under  
TDD No. F4-8809-07  
CONTRACT NO. 68-01-7346

Revision 0

FOR THE

WASTE MANAGEMENT DIVISION  
U.S. ENVIRONMENTAL PROTECTION AGENCY

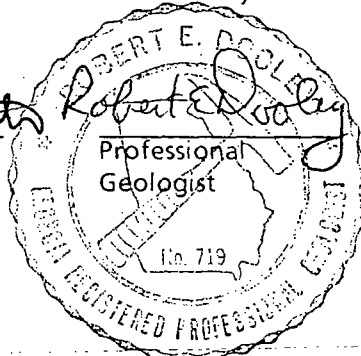
JUNE 1, 1990

NUS CORPORATION  
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## NOTICE

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## EXECUTIVE SUMMARY

Latex Construction is a ship building and repair facility situated on a natural inlet in the southernmost part of the town of Thunderbolt. The inlet was first used as an anchorage for private yachts and shrimp boats starting in the 1930s. In about 1963, the property was purchased, and the inlet was dredged. The dredge spoils were deposited in the southernmost portion of the property, which is now the south yard.

The facility builds and repairs both private and commercial vessels. The processes of greatest concern at the facility are sandblasting and painting. The hulls of newly built and previously painted boats are sandblasted in an open area adjacent to salt marshes. Both the blasting grit and the material being removed pose a potential threat to the environment. Poor housekeeping practices were observed at the facility, as evidenced by stained soils and solvent transfer in an uncurbed area.

The Latex Construction facility is located within the Atlantic Coastal Physiographic Province. Nearly horizontal sedimentary rocks comprise the water-bearing units of concern in the Savannah area. The surficial aquifer in the area is not used for domestic purposes. Sandy deposits of the surficial aquifer rest unconformably upon the Hawthorn Formation. The Hawthorn Formation, which is comprised of sandy silt, feldspathic, phosphatic sand, and a thick section of green silt and clay, acts as a confining layer. The underlying formations of Miocene, Oligocene, and Eocene ages are collectively termed the Floridan aquifer, the aquifer of concern in this area.

Surface water is the pathway of greatest concern. The facility is bordered by both the Wilmington River and Williamson Creek. Extensive salt marshes lie immediately south of the facility. The Wilmington River is subject to heavy commercial and recreational fishing pressures.

The air and onsite pathways are also of concern because there is a population of 1439 within 1 mile. Sandblasting at the facility may continue to release contaminated particles to the air.

Groundwater is of minor concern because the surficial aquifer is not used for potable water. The aquifer of concern in the Savannah area is the Floridan, which is confined by a thick, clay layer.

The field inspection of Latex Construction consisted of the collection of 17 environmental samples of sediment, surface, and subsurface soil. These samples were taken from four potential source areas and along likely migration pathways. Analytical results indicated the presence of a variety of organic

and inorganic contaminants at the facility. Contamination was found in each of the source areas and in both surface and subsurface soil samples. Contamination from the sandblast area also appears to be entering Williamson Creek and the salt marsh along its banks.

Based upon the field inspection and the enclosures, FIT 4 recommends that a Listing Site Inspection, Phase I, be initiated.

## 1.0 INTRODUCTION

The NUS Corporation Region 4 Field Investigation Team (FIT) was tasked by the U.S. Environmental Protection Agency (EPA), Waste Management Division to conduct a Screening Site Inspection (SSI) Phase II at the Latex Construction site in Thunderbolt, Chatham County, Georgia. The inspection was performed under the authority of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) and Superfund Amendments and Reauthorization Act of 1986 (SARA). The task was performed to satisfy the requirements stated in Technical Directive Document (TDD) number F4-8809-07. The field investigation was conducted the week of September 11, 1989.

### 1.1 OBJECTIVES

The objectives of this inspection were to determine the nature of contaminants present at the facility and to determine if a release of these substances has occurred or may occur. Further, this inspection sought to determine the possible pathways by which contamination could migrate from the facility and the populations and environments it would potentially affect. Through these objectives, a recommendation was made regarding future activities at the facility.

### 1.2 SCOPE OF WORK

The objectives were achieved through the completion of a number of specific tasks. These activities were to:

- Obtain and review background materials relevant to HRS scoring of site,
- Evaluate target populations within a 4-mile radius of the facility with regard to groundwater, surface water, air, and onsite exposure pathways,
- Develop a site sketch drawn to scale, and
- Collect 17 environmental samples.

## 2.0 SITE CHARACTERIZATION

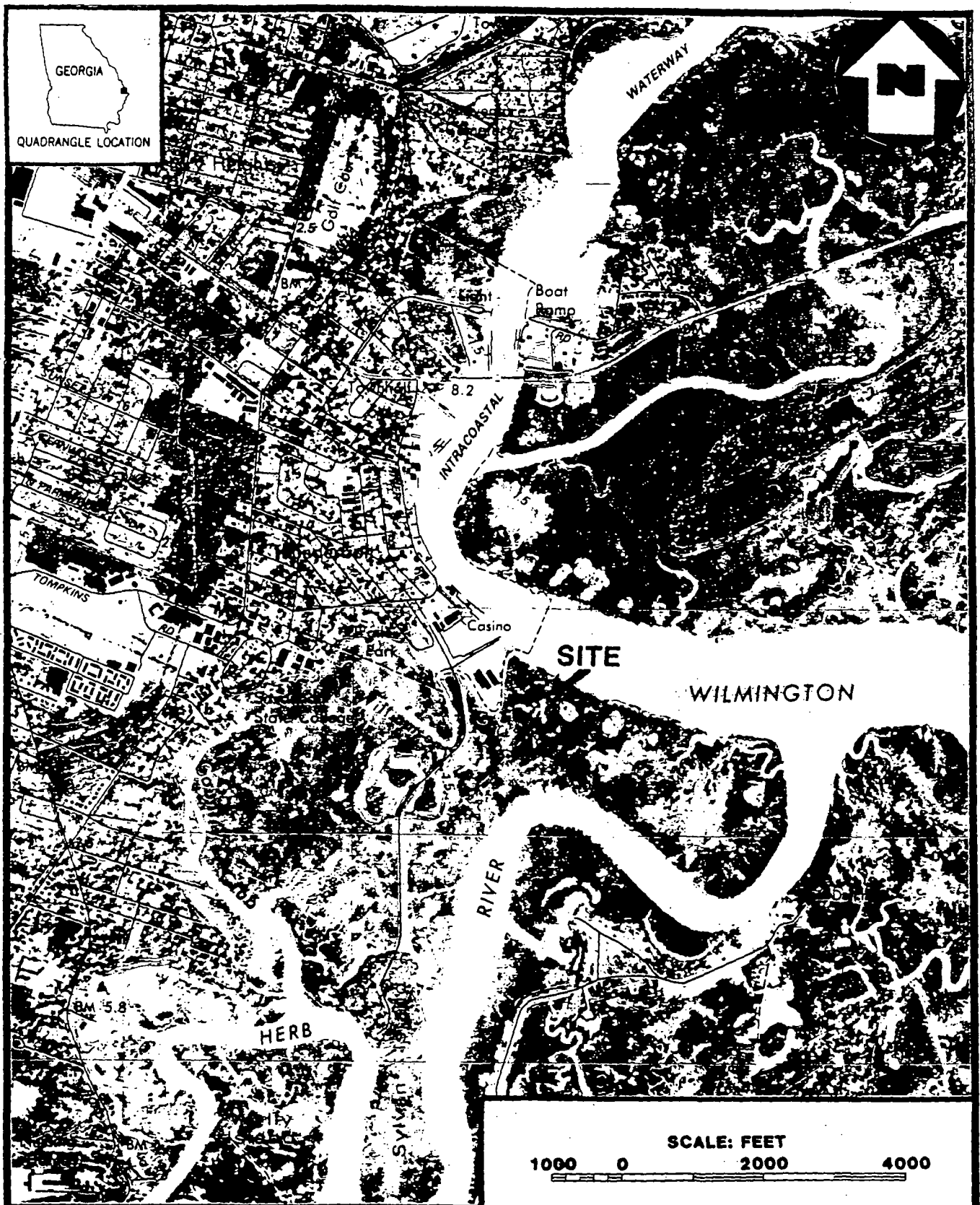
### 2.1 SITE BACKGROUND AND HISTORY

Latex Construction is a ship building and repair facility located at 2136 River Road in Thunderbolt, Georgia. The site is situated on a natural inlet on the Wilmington River (Figures 1, 2). Thunderbolt Marine, Inc (TMI) owns the property on which the site is located. The site consists of the TMI marina, north yard, south yard, west storage area, and ship basin (Ref. 1, p. 3). This study centers on the south yard because most of the activities involving hazardous materials are conducted there.

Latex Construction repaired and serviced small ships, barges, tugs, etc, and also built pleasure boats from 1963 through 1986 (Refs. 1, p. 3; 2). In 1986 the north and south yards were leased to Lockheed Shipbuilding (Refs. 1, p. 3; 3). The facility is currently leased by Trinity Marine Group. Thunderbolt Shipbuilding and Repair, a division of Trinity Marine, which is in turn a subsidiary of Trinity Industries, Dallas, Texas has a sublease (Refs. 3, 4, 5).

The inlet was first used as anchorage for private yachts and shrimp boats starting in about 1930 (Refs. 1, p. 3; 2). It was common practice for shrimp boats to pump their bilges overboard (Ref. 1, p. 3). The property was purchased by the current owner, Thunderbolt Marine, Inc., in about 1963. The marina and dock were in place at that time (Ref. 1, p. 3). From about 1963 to 1986 the facility was operated by Latex Construction, a subsidiary of TMI (Refs. 1, p. 3; 4). During this time, sea walls were built around the basin, and the basin was dredged. The dredge spoils were used to create the south yard which had been a low-lying marshy area. Pilings were also driven into the south yard to stabilize the dredge materials. The previous use of the basin may have contaminated the spoils used to fill the south yard (Ref. 1, p. 3).

In 1983, a group of citizens known as "Friends of the Wilmington River" accused Latex of discharging heavy metals into Williamson Creek. Sediment samples (FW-1, FW-1', FW-2, FW-2'), taken by the citizens group near outfall pipes from the Latex facility, contained elevated concentrations of copper, lead, and zinc (Figure 3, Table 1) (Refs. 6, 7). Based on their samples, the citizens group attempted to block the approval of a dredging permit needed for the construction of a side-launch facility. In response to this, Latex Construction commissioned an independent study of sediments in the area to be dredged. The study concluded that metal concentrations in the sediments were within the normal ranges for the Savannah River (Table 1) (Refs. 8, 9). However, the background sample does not adequately represent background conditions because the sample was collected below the Highway



BASE MAP IS A PORTION OF THE USGS 7.5 MINUTE QUADRANGLE, SAVANNAH, GA.-S.C., 1978.

**SITE LOCATION MAP**

**LATEX CONSTRUCTION**

**THUNDERBOLT, CHATHAM COUNTY, GEORGIA**

**FIGURE 1**



TABLE 1

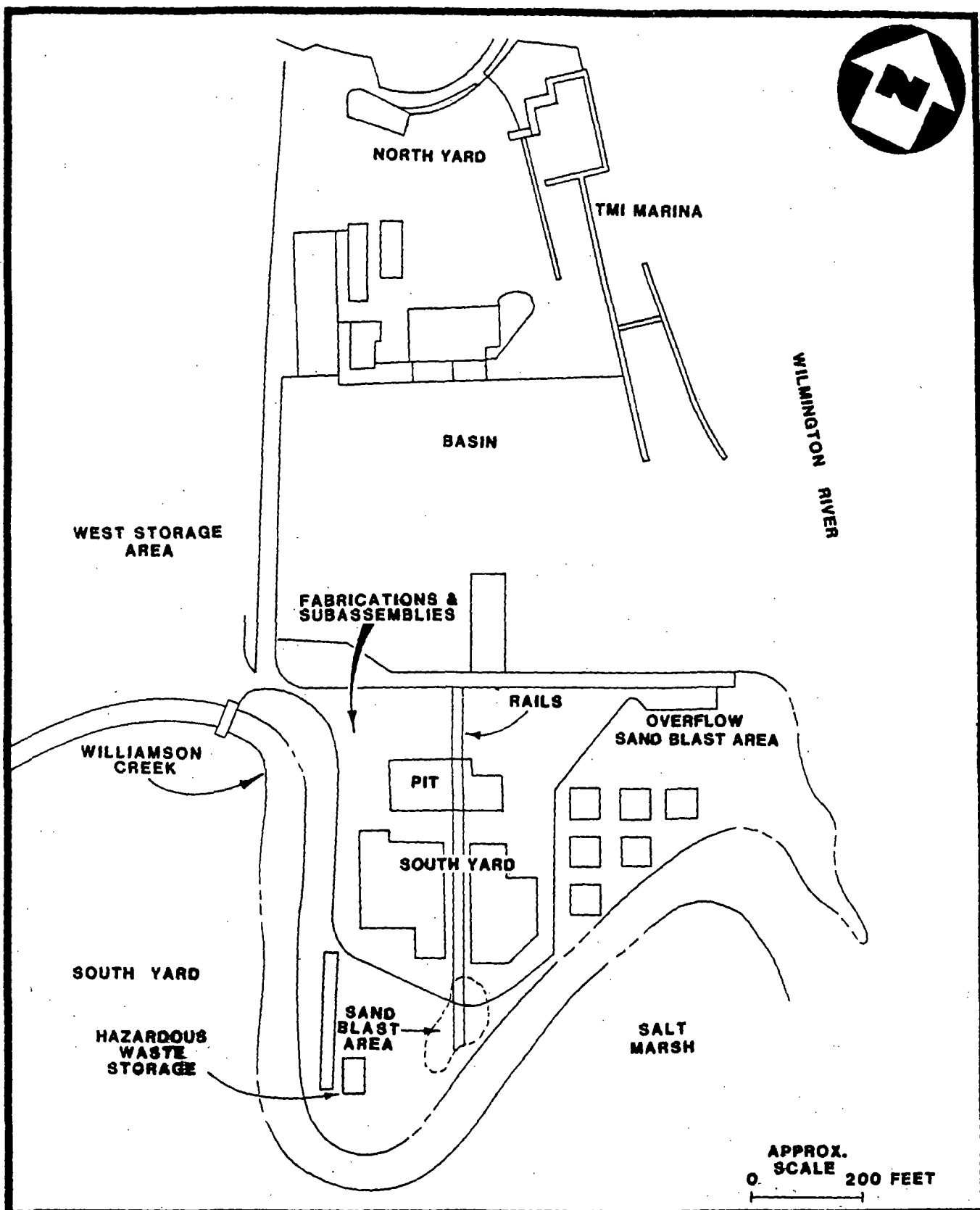
SUMMARY OF INORGANIC ANALYTICAL RESULTS  
FROM PREVIOUS STUDIES  
SEDIMENT SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (mg/kg)	Williamson Creek Near Latex "Discrete Conveyances"				Wilmington River 2.8 Miles Downgradient	Control Sample Country Club Creek	Near Mouth of Williamson Creek	Creek Near Paint Shop	Wilmington River	Under Hwy. 80
	LC-FW-1 2/6/83	LC-FW-1' 2/6/83	LC-FW-2 2/6/83	LC-FW-2' 2/6/83	LC-FW-3' 2/6/83	LC-FW-4' 2/6/83	LC-LC-1 2/24/83	LC-LC-2 2/24/83	LC-LC-3 2/24/83	LC-LC-4 2/24/83
COPPER	68	640	110	180	11	66	16	42	31	96
LEAD		865	160	240	22	19	29	49	37	77
ZINC	920	2600	310	410	57	35	55	130	100	190

Material analyzed for but not detected above minimum quantitation limit

FW Study by Friends of the Wilmington River (Refs. 6, 7).

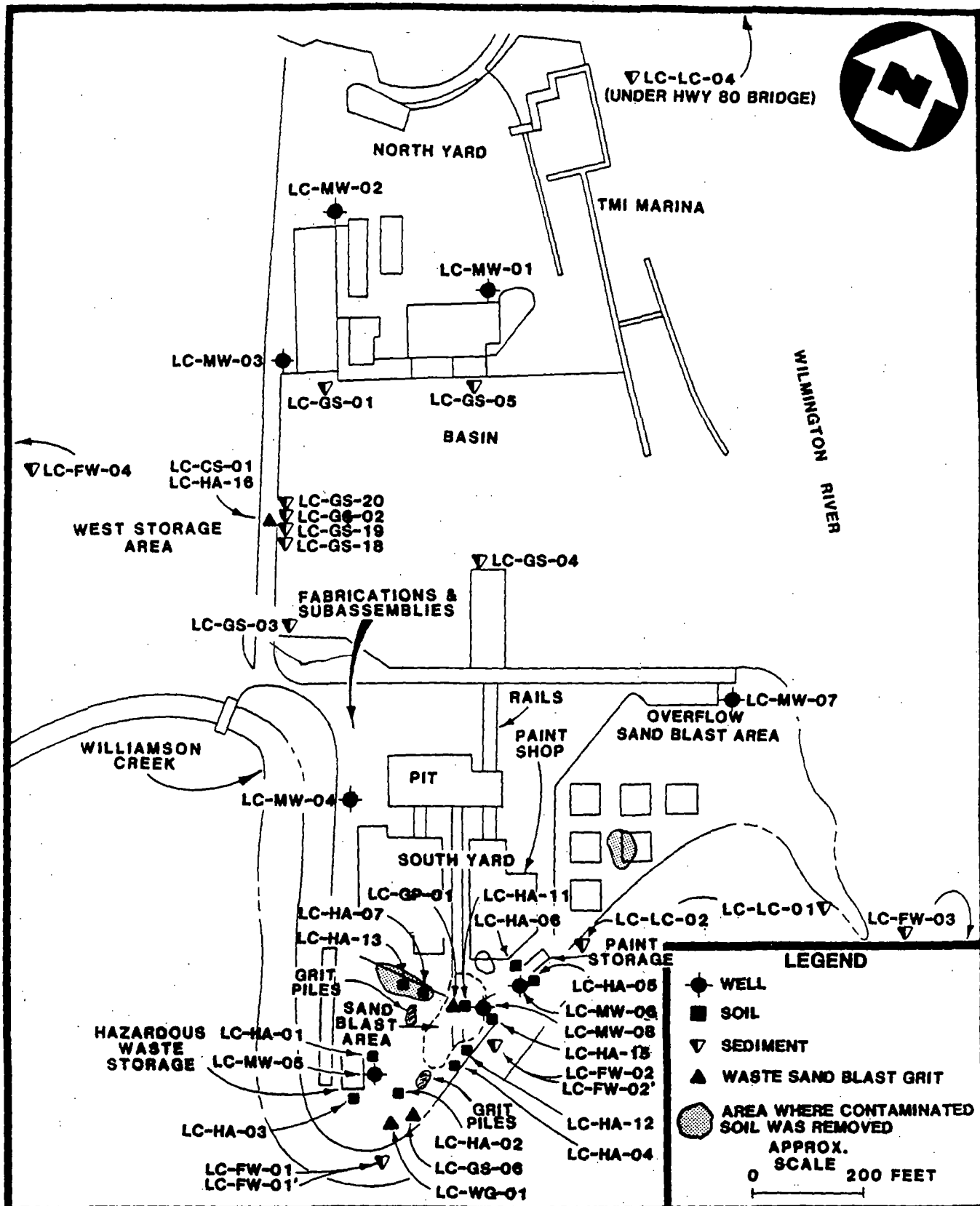
LC Study for Latex Construction by UGA-Marine Extension Service (Ref. 9).



**SITE LAYOUT MAP  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA**

**FIGURE 2**





**SAMPLE LOCATIONS FROM PREVIOUS STUDIES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA**

**FIGURE 3**



80 bridge. This location likely receives runoff from the road in addition to sandblasting debris from bridge maintenance. Additional sampling was required prior to approval of the permit by the U.S. Army Corps of Engineers (COE). The construction permit (No. 074 OYN 004452) was granted, but the side-launch facility has not been built (Ref. 10).

In 1988 and 1989, an environmental assessment of the north and south yards was done for Lockheed Shipbuilding by McLauren Environmental Engineering. The assessment included the installation of monitoring wells and sampling of soil, sediment, sandblast grit, and groundwater. The samples were analyzed for a limited number of organic and inorganic compounds. Sediments in the ship basin were sampled. No volatile organic compounds were found (Table 2). Arsenic, copper, lead, mercury, and zinc were found in the sediments at anomalously high concentrations in some of the samples (Table 3) (Ref. 1). Thus, these compounds are likely to be site-related. The arsenic and copper may be from treated wood, such as pilings, used in the area. The other elements may be related to waste grit which was used as fill near sample locations GS-2, GS-18, GS-19, and GS-20 (Figure 3) (Refs. 1, 11).

Surface soil sampling in the south yard revealed three areas where runoff or leaking equipment had caused some contamination. All of the contaminated soil (45 cubic yards) in these locations was removed. Post excavation samples were taken, and no remaining contamination was detected. The excavated soil was disposed of at the Dean Forest Road Sanitary Landfill (Ref. 11, p. 10).

Also, surface soil contaminated with three organic solvents/fuel related compounds was found near the sandblasting area in the south yard. The highest concentration was 1500 ug/kg for total xylenes (Table 4) (Ref. 1).

Eleven heavy metals were found in waste sandblasting grit in concentrations three times the detection limits or greater. The highest concentrations for these are barium (100 mg/kg), chromium (71 mg/kg), cobalt (71 mg/kg), copper (2800 mg/kg), lead (1500 mg/kg), mercury (0.1 mg/kg), molybdenum (60 mg/kg), nickel (440 mg/kg), selenium (0.3 mg/kg), and zinc (2900 mg/kg) (Table 5) (Ref. 1). This waste grit has been used as fill material in at least one location on the property (Ref. 1, p. 16). Organic analysis was done on HA-16 where the grit was used as fill, and xylenes (110 ug/kg) were detected (Table 4) (Ref. 1).

Groundwater was analyzed for organics. The highest concentration found was 6.5 ug/kg of tetrachloroethylene in the well nearest the sandblast area (Table 6) (Ref. 1).

The locations of samples of interest are shown on Figure 3, and the corresponding sample results are summarized in Tables 1 through 6 (Refs. 1, 11).

TABLE 2

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
 McLAREN ENVIRONMENTAL ENGINEERING ENVIRONMENTAL ASSESSMENT  
 SEDIMENT SAMPLES  
 LATEX CONSTRUCTION  
 THUNDERBOLT, CHATHAM COUNTY, GEORGIA

Location in Basin PARAMETERS (ug/kg)	NW Corner	W. Central	SW Corner	Syncrolift	N. Central	W. Central		
	LC-GS-1 7/22/88	LC-GS-2 7/25/88	LC-GS-3 7/26/88	LC-GS-4 7/26/88	LC-GS-5 7/26/88	LC-GS-18 12/19/88	LC-GS-19 12/29/88	LC-GS-20 12/29/88
VINYL CHLORIDE	-	NA	-	-	-	NA	NA	NA
1,1-DICHLOROETHYLENE	-	NA	-	-	-	NA	NA	NA
1,1-DICHLOROETHANE	-	NA	-	-	-	NA	NA	NA
1,2-DICHLOROETHANE	-	NA	-	-	-	NA	NA	NA
CHLOROFORM	-	NA	-	-	-	NA	NA	NA
1,1,1-TRICHLOROETHANE	-	NA	-	-	-	NA	NA	NA
CARBON TETRACHLORIDE	-	NA	-	-	-	NA	NA	NA
BROMODICHLOROMETHANE	-	NA	-	-	-	NA	NA	NA
1,2-DICHLOROPROPANE	-	NA	-	-	-	NA	NA	NA
BENZENE	-	NA	-	-	-	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	-	NA	-	-	-	NA	NA	NA
BROMOFORM	-	NA	-	-	-	NA	NA	NA
TETRACHLOROETHYLENE	-	NA	-	-	-	NA	NA	NA
TOLUENE	-	NA	-	-	-	NA	NA	NA
CHLOROBENZENE	-	NA	-	-	-	NA	NA	NA
ETHYL BENZENE	-	NA	-	-	-	NA	NA	NA

- Material analyzed for but not detected above minimum quantitation limit

NA Not analyzed

NOTE: Data from References 1, 11

TABLE 2

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
 McLAREN ENVIRONMENTAL ENGINEERING ENVIRONMENTAL ASSESSMENT  
 SEDIMENT SAMPLES  
 LATEX CONSTRUCTION  
 THUNDERBOLT, CHATHAM COUNTY, GEORGIA

Location in Basin PARAMETERS (ug/kg)	NW Corner	W. Central	SW Corner	Syncrolift	N. Central	W. Central		
	LC-GS-1 7/22/88	LC-GS-2 7/25/88	LC-GS-3 7/26/88	LC-GS-4 7/26/88	LC-GS-5 7/26/88	LC-GS-18 12/19/88	LC-GS-19 12/29/88	LC-GS-20 12/29/88
TOTAL XYLENES	-	NA	-	-	-	NA	NA	NA
1,2-DICHLOROBENZENE	-	NA	-	-	-	NA	NA	NA
1,3-DICHLOROBENZENE	-	NA	-	-	-	NA	NA	NA
1,4-DICHLOROBENZENE	-	NA	-	-	-	NA	NA	NA
TRICHLOROFLUOROMETHANE	-	NA	-	-	-	NA	NA	NA
TRICHLOROETHYLENE	-	NA	-	-	-	NA	NA	NA
CHLORODIBROMOMETHANE	-	NA	-	-	-	NA	NA	NA

- Material analyzed for but not detected above minimum quantitation limit

NA Not analyzed

NOTE: Data from References 1, 11

TABLE 3

SUMMARY OF INORGANIC ANALYTICAL RESULTS  
 McLAREN ENVIRONMENTAL ENGINEERING ENVIRONMENTAL ASSESSMENT  
 SEDIMENT SAMPLES  
 LATEX CONSTRUCTION  
 THUNDERBOLT, CHATHAM COUNTY, GEORGIA

Location in Basin PARAMETERS (mg/kg)	NW Corner	W. Central	SW Corner	Syncrolift	N. Central	W. Central		
	LC-GS-1 7/22/88	LC-GS-2* 7/25/88	LC-GS-3 7/26/88	LC-GS-4 7/26/88	LC-GS-5 7/26/88	LC-GS-18 12/19/88	LC-GS-19 12/29/88	LC-GS-20 12/29/88
ANTIMONY	-	5	-	-	-	6	8	8
ARSENIC	7.5	1	0.9	0.9	1	4	4	3
BARIUM	-	-	-	-	-	-	-	10
BERYLLIUM	0.5	-	-	-	-	-	0.5	0.5
CADMIUM	-	-	-	-	-	-	-	-
CHROMIUM	14	21	14	14	19	10	19	20
COBALT	2	6	2	2	2	20	3	4
COPPER	10	71	7	8	12	20	29	76
LEAD	10	51	10	10	20	20	30	48
MERCURY	-	0.24	-	-	-	0.09	0.03	0.2
NICKEL	5	10	4	4	4	5	8	9
SELENIUM	0.1	-	0.1	0.1	0.1	0.1	0.1	0.2
THALLIUM	20	20	20	20	20	-	-	-
VANADIUM	20	10	10	10	20	8	20	20
ZINC	28	240	21	25	35	38	41	19

- Material analyzed for but not detected above minimum quantitation limit

\* Reported in McLaren Environmental Summary Table as GS-2 but data sheets indicate it is GS-1 (Ref. 12).

NOTE: Data from References 1, 11

TABLE 4

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
 McLAREN ENVIRONMENTAL ENGINEERING ENVIRONMENTAL ASSESSMENT  
 SOIL SAMPLES  
 LATEX CONSTRUCTION  
 THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (ug/kg)	Hazardous Waste Storage			Sandblast Area			Paint Storage	Paint Shop	Drainage from Shops		Grit Storage		Grit Used as Fill
	LC-HA-1 7/22/88	LC-HA-2 7/23/88	LC-HA-3 7/23/88	LC-HA-4 7/23/88	LC-HA-11 7/23/88	LC-HA-12 7/25/88	LC-HA-5 7/23/88	LC-HA-6 7/27/88	LC-HA-7 7/22/88	LC-HA-13 7/27/88	LC-HA-15 7/27/88	LC-GS-6 7/27/88	LC-HA-16 7/27/88
DEPTH (feet)	3.0-3.2	3.0-3.2	1.8-2.0	0.5-1.0	2.5-3.0	0.5-1.0	0.5-1.0	0.3-0.5	3.0-3.2	0.5-3.0	0.5-1.0	-	1.0-1.3
VINYL CHLORIDE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
1,1-DICHLOROETHYLENE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
1,1-DICHLOROETHANE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
1,2-DICHLOROETHANE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
CHLOROFORM	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
1,1,1-TRICHLOROETHANE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
CARBON TETRACHLORIDE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
BROMODICHLOROMETHANE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
1,2-DICHLOROPROPANE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
TRANS-1,2-DICHLOROETHYLENE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
BROMOFORM	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
TETRACHLOROETHYLENE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
ETHYL BENZENE	-	-	-	-	-	-	-	-	-	200	-	-	-
TOTAL XYLENES	-	-	-	-	-	-	-	-	-	1500	900	-	110

- Material analyzed for but not detected above minimum quantitation limit

NA Not analyzed

NOTE: Data from Reference 1

TABLE 4

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
 McLAREN ENVIRONMENTAL ENGINEERING ENVIRONMENTAL ASSESSMENT  
 SOIL SAMPLES  
 LATEX CONSTRUCTION  
 THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (ug/kg)	Hazardous Waste Storage			Sandblast Area			Paint Storage	Paint Shop	Drainage from Shops		Grit Storage		Grit Used as Fill
	LC-HA-1 7/22/88	LC-HA-2 7/23/88	LC-HA-3 7/23/88	LC-HA-4 7/23/88	LC-HA-11 7/23/88	LC-HA-12 7/25/88	LC-HA-5 7/23/88	LC-HA-6 7/27/88	LC-HA-7 7/22/88	LC-HA-13 7/27/88	LC-HA-15 7/27/88	LC-GS-6 7/27/88	LC-HA-16 7/27/88
TRICHLOROFLUOROMETHANE	NA	-	NA	-	-	20	-	NA	NA	-	-	-	-
TRICHLOROETHYLENE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-
CHLORODIBROMOMETHANE	NA	-	NA	-	-	-	-	NA	NA	-	-	-	-

- Material analyzed for but not detected above minimum quantitation limit

NA Not analyzed

NOTE: Data from Reference 1

TABLE 5

SUMMARY OF INORGANIC ANALYTICAL RESULTS  
 McLAREN ENVIRONMENTAL ENGINEERING ENVIRONMENTAL ASSESSMENT  
 SANDBLAST GRIT SAMPLES  
 LATEX CONSTRUCTION  
 THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (mg/kg)	LC-CS-1 8/11/88	LC-WG-1 8/11/88	LC-GP-1 8/11/88
ANTIMONY	6	-	-
ARSENIC	-	-	-
BARIUM	100	80	90
BERYLLIUM	5	0.9	0.9
CADMIUM	0.9	0.7	0.7
CHROMIUM	71	26	36
COBALT	28	6	17
COPPER	2800	730	960
LEAD	1500	230	640
MERCURY	0.1	0.1	0.05
MOLYBDENUM	60	-	20
NICKEL	440	62	76
SELENIUM	0.2	0.2	0.3
SILVER	-	-	-
THALLIUM	-	-	-
VANADIUM	9	7	10
ZINC	2900	2100	2100

- Material analyzed for but not detected above minimum quantitation limit  
 NOTE: Data from Reference 1

TABLE 6

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
 McLAREN ENVIRONMENTAL ENGINEERING ENVIRONMENTAL ASSESSMENT  
 GROUNDWATER SAMPLES  
 LATEX CONSTRUCTION  
 THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (ug/l)	North Yard			West of Pit	Haz. Waste Storage	NE of Sandblast Area	Overflow Sandblast Area	Sandblast Area
	LC-MW-01 7/28/88	LC-MW-02 7/28/88	LC-MW-03 7/28/88	LC-MW-04 7/28/88	LC-MW-05 7/28/88	LC-MW-06 7/28/88	LC-MW-07 7/28/88	LC-MW-08 7/28/88
ETHYL BENZENE	-	-	-	-	-	-	-	-
TOTAL XYLENES	-	-	-	-	-	-	-	-
1,2-DICHLOROBENZENE	-	-	-	-	-	-	-	-
1,3-DICHLOROBENZENE	-	-	-	-	-	-	-	-
1,4-DICHLOROBENZENE	-	-	-	-	-	-	-	-
TRICHLOROFLUOROMETHANE	-	-	-	-	-	-	-	-
TRICHLOROETHYLENE	-	-	-	1	-	-	-	5
CHLORODIBROMOMETHANE	-	-	-	-	-	-	-	-

- Material analyzed for but not detected above minimum quantitation limit

Note: The above is a complete list of organic compounds analyzed for during this study (Ref. 1).

TABLE 6

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
 McLAREN ENVIRONMENTAL ENGINEERING ENVIRONMENTAL ASSESSMENT  
 GROUNDWATER SAMPLES  
 LATEX CONSTRUCTION  
 THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (ug/l)	North Yard			West of Pit	Haz. Waste Storage	NE of Sandblast Area	Overflow Sandblast Area	Sandblast Area
	LC-MW-01 7/28/88	LC-MW-02 7/28/88	LC-MW-03 7/28/88	LC-MW-04 7/28/88	LC-MW-05 7/28/88	LC-MW-06 7/28/88	LC-MW-07 7/28/88	LC-MW-08 7/28/88
VINYL CHLORIDE	-	-	-	-	-	-	-	-
1,1-DICHLOROETHYLENE	-	-	-	-	-	-	-	-
1,1-DICHLOROETHANE	-	-	-	-	-	-	-	-
1,2-DICHLOROETHANE	-	-	-	-	-	-	-	-
CHLOROFORM	-	-	-	-	-	-	-	-
1,1,1-TRICHLOROETHANE	-	-	-	-	-	-	-	-
CARBON TETRACHLORIDE	-	-	-	-	-	-	-	-
BROMODICHLOROMETHANE	-	-	-	-	-	-	-	-
1,2-DICHLOROPROPANE	-	-	-	-	-	-	-	-
BENZENE	-	-	-	-	-	-	-	2
TRANS-1,2-DICHLOROETHYLENE	-	-	-	-	-	-	-	-
BROMOFORM	-	-	-	-	-	-	-	-
TETRACHLOROETHYLENE	0.5	-	-	-	-	-	-	6.5
TOLUENE	-	-	-	-	-	-	-	2
CHLOROBENZENE	-	-	-	-	-	-	-	-

- Material analyzed for but not detected above minimum quantitation limit

Note: The above is a complete list of organic compounds analyzed for during this study (Ref. 1).

The facility is identified by three EPA identification numbers: Latex Construction (GAD980803696) and Lockheed Shipbuilding (GAD984268615 and GAD981223688) (Ref. 13). Lockheed Shipbuilding was granted generator status on October 30, 1986. The notification identified nonhalogenated solvents (F003) as the waste being produced (Refs. 14, 15). The organic contaminants found near the sandblast area can be components of F003 (Refs. 1, 14). Trinity reported that Lockheed Shipbuilding had transferred their EPA ID numbers for air emissions and generator permits to Trinity (Ref. 16). However, the state reported that Lockheed had requested that their generator file be closed (Ref. 15). Trinity stated that they have been filing all required forms with the state under the Lockheed ID numbers. Trinity will investigate this matter (Ref. 16).

As a result of a complaint, the state conducted an inspection of the facility on April 2, 1990. At this time, the facility was in the process of terminating operations. Fewer than ten workers are employed by the facility, and their responsibilities are limited to site cleanup and maintenance. As the result of this inspection, the facility was issued a Notice of Violation for minor infractions. No evidence was found to support the citizen complaint concerning the discharge of wastes from the facility (Ref. 5).

## **2.2 SITE DESCRIPTION**

### **2.2.1 Site Features**

The site consists of the south yard (about 8 acres), the ship basin (7 acres), TMI marina and north yard (about 7 acres), and west storage area (about 5 acres) (Ref. 11, p.12) (Appendix A). The property is partly fenced restricting access from land. However, access from the Wilmington River and Williamson Creek is unrestricted (Ref. 17, pp. 34). The property is also guarded (Ref. 17, p. 3).

The south yard is bordered on the north by the ship basin, on the east by the Wilmington River, and on the south and west by Williamson Creek. The facilities in the south yard include machine, pipe cutting, and electrical shops; a paint shop; paint storage sheds; hazardous materials storage area, assembly areas, transfer pit, and a sandblast area (Ref. 1, pp. 8-12).

The paint shop is located on the east side of this yard (Figure 2). A consultant for the property owner reported that the floor drains in the paint shop may drain into the adjacent salt marsh (Ref. 17, p. 13). However, this remains unconfirmed. Workers were observed transferring solvents from one 55-gallon drum to another at the south end of the paint shop in an undiked area which sloped towards a storm drain (Ref. 17, p. 10). Painting is done in the paint shop, the sandblast area, and the

overflow sandblast area (Refs. 1, p. 9; 17, p. 11). Paint storage sheds are located southeast of the paint shop (Refs. 1, p. 9; 17, pp. 4, 5).

The hazardous waste storage area contains two large waste oil tanks in a diked area. The storage area was constructed by Lockheed in 1978 (Ref. 1, pp. 3, 10). A stain measuring 31 feet by 17 feet and having a petroleum-like odor was observed on the west side of the storage area. A facility representative claimed that the stain was sandblasting grit, which they used as fill material around the property (Ref. 17, pp. 8, 23). Another area of stained soil measuring 30 feet by 10 feet was found on the east side and appeared to have come from a plastic pipe inserted into the top of one of the waste oil tanks (Ref. 17, pp. 16, 23). The diking around the waste oil tanks has a drain valve, and a small stain was observed beneath it (Ref. 17, p. 9). During the time that Lockheed operated the facility, the liquid that collected within the diking was periodically drained to the ground (Ref. 1, p. 10). A number of other small stains were scattered around the south yard (Ref. 17, p. 11). A number of drums were observed on the ground and on pallets outside of the hazardous waste storage area. Reportedly, the week prior to the inspection, the drums in the storage area had been scattered about the yard (Ref. 17, p. 13). In 1988, when Lockheed had the property assessed, drums of solvent and portable fuel tanks were seen on the ground outside of the hazardous waste storage area (Ref. 1, p. 10).

Ships are brought to the sand blast area from the ship basin via a rail system. The ships are first placed on rolling cradles and lifted from the water on the syncrolift. The vessel is then rolled south to the transfer pit, where it can then be moved east or west to one of the shops or sandblast area. The sandblast area has been in use between 12 and 14 years and is in the southeast portion of the south yard (Ref. 17, p. 8). Sandblast grit is kept uncontained; two piles and a thick covering of grit were observed in the sandblasting area (Ref. 17, pp. 18-19).

The overflow sandblast area (a.k.a. subassembly platens) is located in the north part of the south yard. Lockheed used this area for assembly of vessels. Some sandblasting, painting, and paint and drum storage has occurred in this area (Refs. 1, p. 11; 17).

A metal shed surrounded by a variety of junk, including an empty 55-gallon drum formerly containing methyl ethyl ketone (MEK), is located near the south end of the yard (Ref. 17, pp. 9, 34). Two deteriorated paper drums containing a pliable, pink, solid and a small amount of red liquid; and a discarded oil boom were located in the north part of the south yard (Ref. 17, pp. 33, 34).

The basin is used for the transfer of components from the north yard to the south yard. TMI dredge barges and ships built in the yard also dock here. A syncrolift is located in the center of the south side of the basin (Ref. 1, p. 12).

The north yard and TMI marina are bordered on the north by River Road, on the east by the Wilmington River, on the south by the ship basin, and on the west by Sylvan Island Road (Ref. 1, p. 14) (Figure 2). Two aboveground fuel storage tanks are located near the northwest corner of the north yard. Fuel from these tanks is delivered to the TMI marina via underground lines. Metal stock is stored in the north yard. Activities carried out in the north yard include welding, cutting of metal stock using both hydraulic and plasma cutters, vehicle and equipment maintenance, a minor amount of parts cleaning, descaling of raw steel with steel shot, priming of steel, and painting in an automated spray booth (Ref. 1, pp. 5-7). Reportedly, Lockheed disposed of the overspray filters with the general facility trash (Ref. 1, p. 7). The TMI marina is used by private pleasure crafts (Ref. 1).

The west storage area is located on the west side of Sylvan Island Road and is bordered by salt marsh on the south and west. This area was used by Lockheed for equipment storage (Ref. 1, pp. 7-8) (Appendix A). The area is currently used by the TMI dredging company (Ref. 17, pp. 4-5).

### 2.2.2 Waste Characteristics

An important part of ship construction and maintenance is the application of marine coatings to prevent fouling by marine organisms and corrosion. Marine coatings are comprised of three parts: an organic solvent to thin the binder in order to allow application, an organic binder to create a continuous solid film upon curing, and a pigment. Antifouling paints most commonly contain cuprous oxide and/or organotin compounds that are the active biocidal agent. The paint may also contain a leaching agent or rosin to allow controlled release of the active ingredient. The most common marine anticorrosive coatings are vinyls, chlorinated rubbers, epoxies (especially polyamide-cured varieties), urethanes, polyesters, inorganic zincs, and zinc-rich organics (Ref. 18).

Among the trialkyl tins (a class of organotin compounds), tributyl tin is known for providing the best balance of fungicidal and bacterial activity and mammalian toxicity (Ref. 19, p. 59). Triorganotins are also preferred antifoulants because they degrade into alkylated species and nontoxic inorganic tin, once liberated from the paint (Ref. 19, p. 60).

The toxicity of organotin compounds depends upon the type of organic groups bonded to the tin. In trialkyl tin compounds, the toxicity typically decreases as the length of the alkyl groups increases. As a class, the triorganotin compounds are the most toxic followed in order of toxicity by the

diorganotins and the monoorganotins, with some exceptions. The oral LD<sub>50</sub>'s (rat) range from 133 to 200 mg/kg for tributyl tin compounds and from 126 to 800 for dibutyl tin compounds (Ref. 19).

In the body, organotins are found distributed mainly in the blood and liver with a lesser amount in the muscle, spleen, heart, or brain (Ref. 20). Most trialkyl tins have been studied and cause acute chemical burns or subacute dermal irritation, as well as encephalopathy and cerebral edema (Refs. 19, 20). Dermal absorption of tributyl tin halides is possible as evidenced by systematic effects observed in rabbits (Ref. 19). On March 1, 1990, a rule restricting the use of tributyl tin antifoulant paints became effective. The application of these paints can only be done by specially trained, certified commercial applicators (Ref. 21).

Surfaces must be prepared by sanding or abrasive blasting to obtain adequate bonding. This creates the potential for air release of fine particulates. Settling of the particulates and subsequent washdown creates the potential for release to soil, surface water, and sediments (Ref. 18). Particles entering surface water near Thunderbolt are likely to be trapped in sediments with little migration from the point of discharge (Ref. 22).

Much of the sand blasting currently conducted is done on previously painted boats, but some is also done to remove fire scale and rust from new ships (Refs. 3; 17, p. 10). Reportedly, the bilges (hull interior) of ships being sandblasted are drained to an unlined pit between the rails in the sandblast area (Ref. 17, p. 10). During this inspection, sandblast grit was found between the rails to a depth of 10 feet. The accumulated grit between the rails is periodically removed to facilitate access to all parts of the hull. Sandblasting is not conducted under any type of cover to prevent particles from migrating into the adjacent salt marsh (Ref. 17, p. 34). The grit in the sandblast area was about 1 foot deep (Ref. 17, p. 19). Sandblast grit was found among the marsh grasses and in the sediments of Williamson Creek adjacent to the sandblast area (Ref. 17, p. 32). The total volume of sandblast grit in the area is estimated to be 837 cubic yards (Ref. 23). Both natural materials and a manmade silica sand have been used for sandblasting (Refs. 1, p. 9; 3).

Black Beauty ®, the sandblasting grit currently used by the facility, is a by-product of coal combustion (Refs. 17, p. 6; 24). Typically, it is a fused, ferro-alumino-silicate in the form of a noncrystalline glass. The manufacturer is Reed Minerals of Highland, Indiana (Ref. 24). The Material Safety Data Sheet for these materials states that the uncontaminated product is not EP toxic and is considered inert (Ref. 25). Analysis of the material was provided by the manufacturer and indicates that the pure product may contain arsenic and beryllium (Ref. 26). An analysis of the mineral content was also provided (Ref. 27). A 1983 analysis of the Latex Construction waste grit (the trade name of the grit used at that time is unknown) revealed the presence of lead (Ref. 28).

The overflow sandblast area, which is currently used for a limited amount of painting, was partially covered by a thin layer of sandblast grit (Ref. 17, pp. 11, 34). Three roll-on, roll-off dumpsters were located in this area. One dumpster was filled with crushed drums and discarded gas cylinders, and the other two were filled with debris. This area appeared to have been recently cleaned (Ref. 17, pp. 4, 5, 12).

The current head of safety and security for Thunderbolt Shipbuilding reported that most painting is done in dry dock, but some touchup work may be done in the water. Oil booms are put in place, and absorbent materials are kept on hand whenever work is done in the water (Ref. 3).

Other hazardous materials known to have been used at the facility include solvents (i.e. MEK, methyl isobutyl ketone, xylene), hydraulic oil, freon, and automatic transmission fluid (Ref. 1). Trinity's hazardous waste is collected by Ashland Chemical as was Lockheed's waste (Refs. 1, p. 4; 17, p. 8). The waste sandblast grit is disposed of in a local landfill (Ref. 17, p. 13). Storm drains and perhaps floor drains from some of the buildings discharge to the basin and Williamson Creek (Refs. 1; 17, pp. 4, 5, 13; 29).

Although the hazardous waste storage and sandblast area are potential sources of greatest concern, there are a number of stains throughout the south yard. There is also evidence that sandblast grit has been used as fill in numerous areas. Since the south yard was constructed from dredge spoils from the basin, there is the possibility that the soils throughout the entire yard are contaminated.

## 3.0 REGIONAL POPULATIONS AND ENVIRONMENTS

### 3.1 POPULATION AND LAND USE

#### 3.1.1 Demography

The site is located in a small, industrial area surrounded by residential neighborhoods. All of the city of Thunderbolt (population 2576) and a large portion of Savannah lie within 4 miles of the site (Appendix A) (Ref. 30). The total population within a 4-mile radius of Latex Construction is estimated as 80,303 based on the 1980 U.S. Census. The population distribution is 1459 people between 0 and 1 mile, 16,152 between 1 and 2 miles, 27,823 between 2 and 3 miles, and 34,869 between 3 and 4 miles (Ref. 31).

There are two schools close to the facility. Thunderbolt Elementary is located 2800 feet to the northwest and has a student population of 682 (Ref. 32) (Appendix A). Savannah State College is located 2800 feet west of the Latex property and has a student body of about 2200 and a faculty of about 500 (Ref. 33) (Appendix A).

#### 3.1.2 Land Use

The facility is located in the southernmost portion of Thunderbolt. The areas to the south and east are sparsely populated, while areas to the north and west are densely populated suburbs of Savannah. Almost the entire town of Thunderbolt lies within 1 mile of the shipyard. The closest residence lies about 100 feet to the north. The facility is bordered by extensive salt marshes on the south and west (Appendix A).

### 3.2 SURFACE WATER

#### 3.2.1 Climatology

The climate is characterized by mild temperatures and abundant rainfall. The area's net annual precipitation is approximately 4 inches, and the 1-year, 24-hour rainfall is approximately 3.5 inches (Refs. 34, 35).

### 3.2.2 Surface Drainage

Surface water runoff from the facility flows directly into Williamson Creek, which flows into a tidal portion of the Wilmington River, or runoff may flow directly into the river. The river then continues south for 2 miles before breaking into a number of channels, which enter the Atlantic Ocean within 15 stream miles of the facility. Both Williamson Creek and the Wilmington River are subject to tidal flushing and are bordered by extensive salt marshes (Ref. 17) (Appendix A).

### 3.2.3 Potentially Affected Water Bodies

All the coastal rivers and creeks in this area are used for recreational fishing (Refs. 17, p. 30; 36). The Savannah River in Chatham County and Wassaw Sound support a significant amount of commercial fishing. Commercially harvested species include crab, clams, conch, carp, shad, and sturgeon (Ref. 37). The Wilmington River supports a commercial crab fishery, and the extensive salt marshes provide a recruitment area for shrimp (Ref. 38). There is also commercial fishing for Eastern Oysters in Wassaw Sound (Ref. 39).

Some endangered or threatened species, including Shortnosed Sturgeon (Acipenser brevirostrum), Atlantic Green Sea Turtle (Chelonia mydas), Hawksbill Turtle (Eretmochelys), Brown Pelican (Pelecanus occidentalis carolinensis), West Indian Manatee (Trichechus manatus), and Bald Eagle (Haliaeetus leucocephalus) may be found in the Savannah Area (Ref. 40). However, there are no critical habitats designated in Chatham County (Ref. 41). There are nesting areas for the Loggerhead Turtle (Caretta caretta) along coastal beaches in the area (Ref. 39).

## 3.3 GROUNDWATER

### 3.3.1 Hydrogeology

The Savannah area is located within the Atlantic Coastal Physiographic Province. Nearly horizontal sedimentary rocks that gently dip to the southeast comprise the water-bearing units of concern in the Savannah area. Surficial sediments of Quaternary age form the Savannah area's surficial aquifer (Ref. 42, plate 7, p. 15). This surficial unit is composed mainly of sand and is generally less than 80 feet thick in the Savannah area (Ref. 43). Groundwater from the surficial aquifer is adequate for domestic use in some inland areas; however, near the ocean and along tidal estuaries, brackish water is often encountered (Ref. 44, pp. 33-37). Sandy deposits of the surficial aquifer rest unconformably upon the Hawthorn Formation (Ref. 45, p. 14). The Hawthorn Formation is of Miocene age and is composed of sandy silt, feldspathic phosphatic sand, and slightly dolomitic, sandy, phosphatic, fossiliferous

limestone (Ref. 42, p. 15). In the Savannah area, a thick section of green silt and clay contributes to the Hawthorn Formation's confining properties (Ref. 44, pp. 29-31). Thick sand zones and lenses of limestone within the Hawthorn produce moderately large volumes of water under artesian conditions (Refs. 43; 44, p. 30). The Hawthorn Formation is approximately 120 feet thick in the area; and even though it is used as a source for some private wells, it is an important confining unit in the Savannah area (Refs. 43; 44, p. 14). The vertical conductivity of the least permeable layers within the Hawthorn Formation has been calculated to average  $1.3 \times 10^{-3}$  ft/day ( $4.59 \times 10^{-7}$  cm/sec) in Chatham County (Ref. 46, p. 28).

The underlying formations of Miocene, Oligocene, and Eocene ages are collectively termed the Floridan aquifer, also known as the Principal Artesian aquifer (Ref. 44, pp. 14, 37). In descending stratigraphic order, the geologic units which constitute the principal artesian aquifer are the Tampa Limestone, undifferentiated rocks, the Ocala Limestone, the Gosport Sand, and the Lisbon Formation. The Lisbon Formation serves as the lower confining unit in this hydrologic system (Ref. 44). Yields in the principal artesian aquifer range from 200 gpm in the Tampa Limestone to 4200 gpm in the Ocala Limestone (Ref. 44, pp. 14, 15). The transmissivity in the principal artesian aquifer ranges from 25,000 to 50,000 ft<sup>2</sup>/day in the Savannah area (Ref. 45, plate 1).

Large groundwater withdrawals from the principal artesian aquifer in Savannah have created a cone of depression that extends laterally beyond the city (Refs. 43; 47, p. 111). This cone of depression has a very steep gradient, which results in an artificially induced downward component in the movement of water within the surficial aquifer. The principal artesian aquifer influences recharge from the surficial aquifer toward the cone of depression. The interconnection, however, between the principal artesian aquifer and overlying units is very slight according to U.S. Geological Survey personnel familiar with the area (Ref. 43).

The groundwater flow direction in the principal artesian aquifer is greatly influenced by the cone of depression. The principal artesian aquifer's groundwater flow direction at the Latex property is north and west toward the center of pumping (Ref. 47, p. 111). Groundwater within the surficial aquifer is most likely to flow east toward the Wilmington River or south toward Williamson Creek (Appendix A). The water table within the surficial aquifer is located within 10 feet below land surface at the facility (Ref. 1, pp. 27, 29).

### 3.3.2 Aquifer Use

Nearly all the residential water needs of Chatham County are provided by groundwater from deep wells drilled into the principal artesian aquifer (Ref. 48). The water needs of communities within

4 miles of Latex Construction are served either by one of five municipal water systems or by private wells. The Chatham County, Hunter Army Airfield, Thunderbolt, and Savannah water systems obtain their water from deep wells. The Savannah Industrial and Development Water System, which supplies water for industry and to the Savannah system during peak summer periods, obtains its water from Abercorn Creek. There are 14 municipal wells serving approximately 160,000 residents that lie within 3 miles of the facility (Refs. 49, 50). The nearest lies 2700 feet north of the facility (Ref. 51). Private potable water wells in Chatham County are generally cased to 300 feet and have an additional 100 feet of open hole. Shallow wells for potable water are illegal (Ref. 48). No private wells were found during a reconnaissance of the facility (Ref. 51).

### **3.4 SUMMARY OF POTENTIALLY AFFECTED POPULATIONS AND ENVIRONMENTS**

There are four pathways of concern for the facility: surface water, air, onsite pathways, and groundwater.

The surface water is the primary pathway of concern at the Latex Construction facility. The site borders extensive salt marshes and is on waterbodies that are extensively commercially and recreationally fished. A number of aquatic endangered species are also found in the waters of the site area.

The air and onsite pathways are also of concern because of the sandblasting activities at the site and the presence of uncontained potentially contaminated surface soils. Potentially affected targets within 4 miles include students, employees, and residents. The estimated population within 4 miles of the site is 80,303. There is a population of 1439 within 1 mile that is a potential target for the onsite exposure pathway. A number of terrestrial endangered species may also be found in the area.

Groundwater is of minor concern because the surficial aquifer is not used for potable water. The aquifer of concern in the Savannah area is the Floridan, which is confined by a thick, clay layer.

## 4.0 FIELD INVESTIGATION

### 4.1 SAMPLE COLLECTION

#### 4.1.1 Sample Collection Methodology

All sample collection, sample preservation, and chain-of-custody procedures used during this investigation were in accordance with standard operating procedures as specified in Sections 3 and 4 of the Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual; United States Environmental Protection Agency, Region IV, Environmental Services Division, April 1, 1986.

#### 4.1.2 Duplicate Samples

Duplicate samples were taken during this investigation. The offer of duplicate samples was accepted by Rudy Cherry III of Westinghouse Environmental Services, representing the property owner, and by Gary Raven of Trinity Industries, representing Trinity Marine, Inc. (Ref. 17).

#### 4.1.3 Description of Samples and Sample Locations

A total of 17 samples were collected for this inspection. Samples were taken in four potential source areas, the sandblast area, overflow sandblast area, hazardous waste storage, basin, and along likely migration pathways, in an attempt to identify and characterize contaminants that may be present in the environment as a result of activities at the facility. Samples collected consisted of 6 surface soil, 5 subsurface soil, and 6 sediment samples. Two of the sediment samples, one in Williamson Creek and one in the Wilmington River, were collected as control samples. No true background sediment samples could be collected because tidal flushing could potentially move contaminants upstream, as well as downstream. No groundwater samples were collected because of the lack of targets associated with the surficial aquifer. Sample locations are described in detail in Table 7 and are shown in Figure 4.

TABLE 7

SAMPLE CODES, DESCRIPTION, AND RATIONALE  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

Sample Code	Description	Rationale
LC-SS-01	Background sample taken from grassy strip at north end of west storage area parking lot. Collected between 1/2 and 2 feet below land surface (bls).	To determine background surface soil conditions.
LC-SS-02	Source sample taken 3 feet south of hazardous waste storage area below drain in dike around waste oil tank. Soil slightly stained. Collected between 0 and 4 inches bls.	To determine if contaminants have been drained to ground from within diking.
LC-SS-03	Source sample taken just east of rails in sandblast area. Collected beneath loose sandblast grit at a depth of 1.5 feet bls.	To determine if contaminants are present in the sandblast area.
LC-SS-04	Source sample taken about 100 feet south of building between grit pile and sandblast area. Collected 8 inches bls.	To determine if contaminants are present in the sandblast area.
LC-SS-05	Source sample taken from large stain on west side of hazardous waste storage area. Collected 1/2 inch bls.	To determine if contaminants are present in the stain.
LC-SS-06	Source sample taken 150 feet south of basin and 120 feet east of pit. Collected 4 inches bls.	To determine if contaminants are present in this area where some sandblasting seems to have been done.
LC-SB-01	Background sample taken from same hole as LC-SS-01. Saturated soil collected 5 feet bls.	To determine background subsurface soil conditions.
LC-SB-02	Source sample taken 60 feet southeast of hazardous waste storage area. Saturated soil collected between 4 and 6 feet bls.	To determine if contaminants are present in south end of yard which may have been filled.

LC - Latex Construction  
 SS - Surface Soil  
 SB - Subsurface Soil  
 SD - Sediment

**TABLE 7**  
**SAMPLE CODES, DESCRIPTION, AND RATIONALE**  
**LATEX CONSTRUCTION**  
**THUNDERBOLT, CHATHAM COUNTY, GEORGIA**

Sample Code	Description	Rationale
LC-SB-03	Source sample taken between transfer rails in sandblast area. Saturated soil collected beneath 10 feet of sandblast sand. Sample depth is between 10 and 12 feet bls.	To determine if contaminants are present in subsurface soils in sandblast area.
LC-SB-04	Source sample taken from same hole as LC-SS-04. Saturated soil collected 6 feet bls.	To determine if contaminants are present in subsurface soils in sandblast area.
LC-SB-05	Source sample taken 3 feet from LC-SS-06. Saturated soil collected between 4 1/2 and 5 feet bls.	To determine if contaminants are present in area where some sandblasting and filling may have been done.
LC-SD-01	Control sample taken 50 feet east of Rivers End dock and 100 feet south of commercial shrimp boat docks in Wilmington River. Collected with ponar dredge in 20 feet of water at low tide.	To isolate contaminants in sediments originating on site from those originating from offsite sources.
LC-SD-02	Source sample taken from center of basin. Collected with hand auger in 16 feet of water at low tide.	To determine if contamination attributable to facility operations has entered the Wilmington River.
LC-SD-03	Downgradient sample taken from Wilmington River 75 feet south of basin and 100 feet east of the shore. Collected with ponar dredge in 8 feet of water.	To determine if contamination attributable to facility operations has entered the Wilmington River.
LC-SD-04	Control sample taken in Williamson Creek at first island south of facility. Collected with hand auger in 7 feet of water during incoming tide.	To isolate contaminants originating on site from those originating off site.

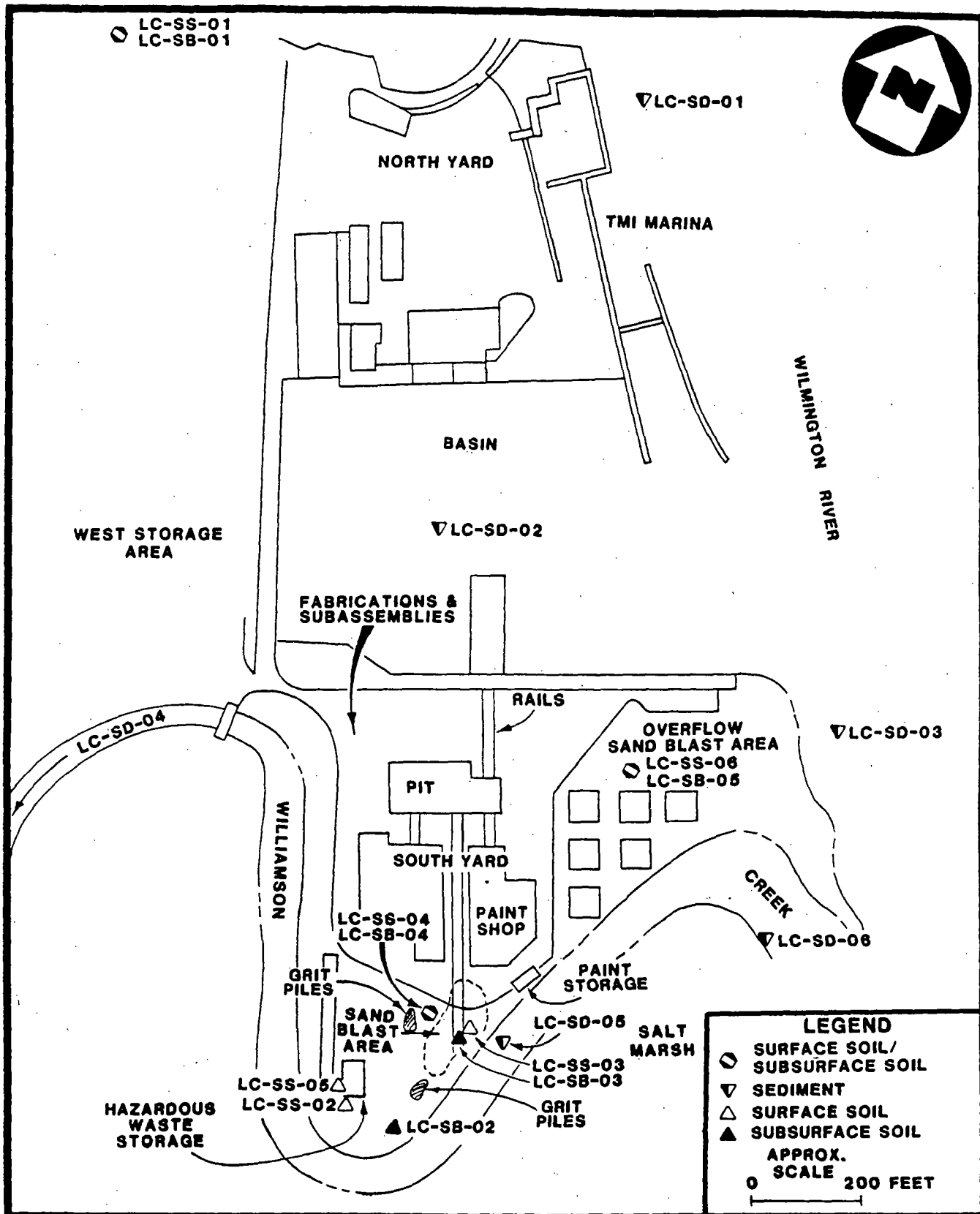
LC - Latex Construction  
SS - Surface Soil  
SB - Subsurface Soil  
SD - Sediment

TABLE 7

SAMPLE CODES, DESCRIPTION, AND RATIONALE  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

Sample Code	Description	Rationale
LC-SD-05	Source sample taken in Williamson Creek 10 feet from shore adjacent to sandblast area near an outfall pipe. Collected with hand auger in 4 1/2 feet of water during incoming tide. Sandblast grit was found on top of sediments in the marsh.	To determine if contaminants attributable to facility had entered Williamson Creek.
LC-SD-06	Downgradient sample taken 100 feet north of mouth of Williamson Creek near south bank in about 6 feet of water.	To determine if contaminants attributable to facility had entered Williamson Creek.

LC - Latex Construction  
SS - Surface Soil  
SB - Subsurface Soil  
SD - Sediment



**SAMPLE LOCATION MAP  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA**

**FIGURE 4**



## 4.2 SAMPLE ANALYSIS

### 4.2.1 Analytical Support and Methodology

All samples collected were analyzed under the Contract Laboratory Program (CLP) and analyzed for all parameters listed in the Target Compound List (TCL). Organic analysis of soil samples was performed by CompuChem Laboratories, Research Triangle Park, North Carolina. Inorganic analysis of soil samples was performed by DataChem, Salt Lake City, Utah. Special analytical services were performed by Environmental Science & Engineering, Gainesville, Florida.

All laboratory analyses and laboratory quality assurance procedures used during this investigation were in accordance with standard procedures and protocols as specified in the Analytical Support Branch Operations and Quality Assurance Manual, United States Environmental Protection Agency, Region IV, Environmental Services Division, revised June 1, 1985; or as specified by the existing United States Environmental Protection Agency standard procedures and protocols for the contract analytical laboratory program.

### 4.2.2 Analytical Data Quality

All analytical data were subjected to a quality assurance review as described in the EPA, Environmental Services Division laboratory data guidelines. In the tables, some of the concentrations of the organic and inorganic parameters have been flagged with a "J". This indicates that the qualitative analysis was acceptable, but the quantitative value has been estimated. A few other compounds are flagged with an "N" indicating that they were detected based on the presumptive evidence of their presence. This means that the compound was tentatively identified, and its detection cannot be used as positive identification to its presence. The complete analytical data sheets are presented in Appendix B.

### 4.2.3 Presentation of Analytical Results

Throughout the following discussion of analytical results, the concentrations of some of the contaminants detected have been described as "significant." This means that the concentration was either three times that found in the background/control sample, or it was 3 times the minimum quantitation limit (MQL).

Special analytical services were requested for monobutyl tin, dibutyl tin, tributyl tin, monophenyl tin, diphenyl tin, triphenyl tin, and total tin because of the use of organotin compounds as antifouling

agents in marine coatings. No phenyl tins were detected. All organotin compounds were confirmed by gas chromatography/mass spectrometry. This analysis was done on all samples except LC-SS-05.

#### 4.2.3.1 Sandblast Area

Four soil samples were collected in the sandblast area, and sediment samples were collected in Williamson Creek adjacent to and downstream of the sandblast area. Significant concentrations of a variety of polyaromatic hydrocarbons (PAHs), typical indicators of petroleum and oil products; metals; and organotin compounds were detected in the sandblast area.

Phenanthrene (4 times MQL) and fluoranthene (4.8 times MQL) were found in the surface soil sample collected west of the transfer rails (LC-SS-04). Ethyl benzene (3 times MQL), xylenes (4 times MQL), phenanthrene (4 times MQL), fluoranthene (7.8 times MQL), and pyrene (6 times MQL) were found in the subsurface soil sample between the transfer rails (LC-SB-03). The PAHs detected could be from the draining of bilges in the sandblast area or from fuel spills. Three miscellaneous polynuclear aromatics (PNAs) and one organic solvent were also tentatively identified at estimated concentrations ranging from 200 to 4000 ug/kg in surface soil samples. Tentative identifications and estimated concentrations were also made for two PNAs and 15 other purgeable compounds in subsurface soil samples. Organic analytical results are summarized in Table 8.

Surface soil samples from the sandblast area contained only one metallic contaminant of note. Zinc was found at concentrations of 7 times background. In contrast to this, subsurface soil samples contained numerous metals at elevated levels. The subsurface soil sample collected adjacent to the rails contained 10 metals, including cadmium, chromium, copper, vanadium, and zinc, ranging from 3 to 12 times the MQL or background level. The sample collected from between the rails contained 15 metals, including arsenic, barium, cadmium, chromium, copper, lead, vanadium, and zinc, ranging from 4 to 115 times background or MQL levels. Most of the metals found could come from more than one source or activity on the property. Marine coatings may contain a variety of trace metals. Red lead and zinc chromate are used as anticorrosives; cuprous oxide, as well as organotin compounds are used as antifoulants, and almost all the metals detected on site are used as paint pigments. Copper, chrome, and arsenic are also commonly used as wood preservatives. Heavy metals also occur in silicon dioxide abrasives such as volcanic ash, sand, etc., which are used in sandblasting. Sandblasting itself releases steel alloys such as beryllium, vanadium, cadmium, and nickel in particulate form. Trace amounts of lead, chromium, arsenic, zinc, magnesium, and other metals also occur in fuel oils and other petroleum products. Inorganic analytical results are summarized in Table 9.

TABLE 8

**SUMMARY OF ORGANIC ANALYTICAL RESULTS  
SURFACE AND SUBSURFACE SOIL SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA**

	Background	Haz. Waste Storage (HWS)	Sandblast Area		Stain Near HWS	Overflow Sandblast Area	Background	South End of Yard Near HWS	Sandblast Area		Overflow Sandblast Area
PARAMETERS (ug/kg)	LC-SS-01	LC-SS-02	LC-SS-03	LC-SS-04	LC-SS-05	LC-SS-06	LC-SB-01	LC-SB-02	LC-SB-03	LC-SB-04	LC-SB-05
<b>PURGEABLE COMPOUNDS</b>											
TRICHLOROFORM	-	5J	4J	6J	1J	2J	5J	9J	4J	-	2J
TOLUENE	-	7	-	3J	11	2J	-	3J	7J	-	-
ETHYL BENZENE	-	-	-	-	-	-	-	-	21	-	-
TOTAL XYLENES	-	-	-	-	2J	-	-	-	28	-	-
<b>EXTRACTABLE COMPOUNDS</b>											
NAPHTHALENE	-	-	-	100J	-	-	-	-	-	-	-
2-METHYLNAPHTHALENE	-	-	-	-	21,000J	-	-	-	-	-	-
ACENAPHTHENE	-	-	-	170J	-	-	-	-	300J	-	-
DIBENZOFURAN	-	-	-	84J	-	-	-	-	-	-	-
FLUORENE	-	-	-	150J	19,000J	-	-	-	-	-	-
PHENANTHRENE	-	-	-	1600	38,000	-	-	-	1600	-	-
ANTHRACENE	-	-	-	360J	-	39J	-	-	250J	-	-
FLUORANTHENE	-	180J	110J	1800	-	340J	-	-	2900	51J	47J
PYRENE	-	170J	-	1300J	-	250J	-	89J	2400	60J	-

- Material analyzed for but not detected above minimum quantitation limit  
 J Estimated value  
 N Presumptive evidence of presence of material

TABLE 8

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
SURFACE AND SUBSURFACE SOIL SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (ug/kg)	Background	Haz. Waste Storage (HWS)	Sandblast Area		Stain Near HWS	Overflow Sandblast Area	Background	South End of Yard Near HWS	Sandblast Area		Overflow Sandblast Area
	LC-SS-01	LC-SS-02	LC-SS-03	LC-SS-04	LC-SS-05	LC-SS-06	LC-SB-01	LC-SB-02	LC-SB-03	LC-SB-04	LC-SB-05
BENZO(A)ANTHRACENE	-	100J	51J	800	-	130J	-	-	930	-	-
CHRYSENE	-	140J	59J	750	-	170J	-	-	1200	-	-
BENZO(B AND OR F)FLUORANTHENE	-	210J	-	1000J	-	130J	-	-	680J	-	-
BENZO-A-PYRENE	-	100J	43J	630	-	140J	-	-	1000	-	-
INDENO (1,2,3-CD) PYRENE	-	53J	-	300J	-	78J	-	-	380J	-	-
DIBENZO(A,H)ANTHRACENE	-	-	-	-	-	-	-	-	150J	-	-
BENZO(G,H)PERYLENE	-	59J	-	320J	-	84J	-	-	460J	-	-
OXYBIETHANOL DIACETATE	-	-	-	-	-	-	500JN	-	-	-	-
ETHANEDIOL MONOACETATE	-	-	-	4000JN	-	-	4000JN	-	-	-	-
DIMETHYLNAPHTHALENE	-	-	-	-	100,000JN	-	-	-	1000JN	-	-
TRIMETHYLNAPHTHALENE	-	-	-	-	200,000JN	-	-	-	3000JN	-	-
CHLOROTRIS(METHYLPROPYL)STANNANE	-	800JN	-	-	-	300JN	-	-	20,000JN	-	-
BENZENACETIC ACID	200JN	-	-	-	-	-	-	-	-	-	-
ETHYLIDENEBIS(ETHYLBENZENE)	-	200JN	-	-	-	-	-	-	-	-	-
BENZOPYRENE(NOT A)	-	300JN	-	-	-	400JN	-	-	-	-	-

- Material analyzed for but not detected above minimum quantitation limit  
J Estimated value  
N Presumptive evidence of presence of material

TABLE 8

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
SURFACE AND SUBSURFACE SOIL SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (ug/kg)	Background	Haz. Waste Storage (HWS)	Sandblast Area		Stain Near HWS	Overflow Sandblast Area	Background	South End of Yard Near HWS	Sandblast Area		Overflow Sandblast Area
	LC-SS-01	LC-SS-02	LC-SS-03	LC-SS-04	LC-SS-05	LC-SS-06	LC-SB-01	LC-SB-02	LC-SB-03	LC-SB-04	LC-SB-05
TRIBROMOPHENOL	-	-	-	300JN	-	-	-	-	-	-	-
CYCLOPENTAPHENANTHRENE	-	-	-	200JN	-	-	-	-	-	-	-
BENZOFLORENE	-	-	-	300JN/2	-	-	-	-	-	-	-
BENZOFLOQUANTHENE (NOT B OR F)	-	-	-	400JN	-	-	-	-	-	-	-
PETROLEUM PRODUCT	-	-	-	-	N	-	-	-	-	-	-
UNIDENTIFIED COMPOUNDS*NO	5000J/5	2000J/4	-	600J/1	5,000,000J/17	5000J/8	5000J/2	-	30,000J/15	800J/2	1000J/2
PESTICIDE/PCB COMPOUNDS											
4,4'-DDE (P,P'-DDE)	37	-	-	-	-	-	-	-	-	-	-
GAMMA-CHLORDANE /2	-	-	-	-	930	-	-	-	-	-	-
PCB-1248 (AROCLOR 1248)	-	-	-	-	-	-	-	-	280	-	-

- Material analyzed for but not detected above minimum quantitation limit  
J Estimated value  
N Presumptive evidence of presence of material

TABLE 9

SUMMARY OF INORGANIC ANALYTICAL RESULTS  
SURFACE AND SUBSURFACE SOIL SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (mg/kg)	Background	Haz. Waste Storage	Sandblast Area		Stain	Overflow Sandblast Area	Background	South End of Yard	Sandblast Area		Overflow Sandblast Area
	LC-SS-01	LC-SS-02	LC-SS-03	LC-SS-04	LC-SS-05	LC-SS-06	LC-SB-01	LC-SB-02	LC-SB-03	LC-SB-04	LC-SB-05
ALUMINUM	5800	7700	3100	1700	7600	8000	5300	33,000	20,000	11,000	8200
ARSENIC	-	3.1J	-	-	3J	3.5J	-	-	8.8J	-	14J
BARIUM	26	58	-	-	100	130	10	37	64	17	14
BERYLLIUM	-	-	-	-	2.8	2.9	-	-	-	-	-
CADMIUM	-	-	-	-	14	13	-	-	5.8	2.7	2.6
CALCIUM	1700J	3700J	450J	3700J	8600J	6800J	880J	27,000J	4900J	3700J	9700J
CHROMIUM	-	33J	2.4J	5.2J	97J	91J	5J	49J	39J	18J	13J
COBALT	-	8.5	-	-	30	19	-	11	11	5.8	-
COPPER	-	150	-	-	1700	1300	-	-	460	48	-
IRON	2800J	12,000J	760J	2700J	36,000J	33,000J	910J	22,000J	24,000J	9500J	6400J
LEAD	22	190	14	18	1500	770	-	13	95	14	17
MAGNESIUM	280	850	-	240	1300	1100	140	8300	2400	1500	960
MANGANESE	74J	88J	11J	24J	560J	270J	16J	220J	180J	83J	80J
MERCURY	-	0.13	-	-	1.2	-	-	-	-	-	0.18
NICKEL	-	-	-	-	230	190	-	-	-	-	-
POTASSIUM	150	790	-	210	990	1000	-	2300	1900	1000	440

- Material analyzed for but not detected above minimum quantitation limit  
J Estimated value

TABLE 9

SUMMARY OF INORGANIC ANALYTICAL RESULTS  
SURFACE AND SUBSURFACE SOIL SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (mg/kg)	Background	Haz. Waste Storage	Sandblast Area		Stain	Overflow Sandblast Area	Background	South End of Yard	Sandblast Area		Overflow Sandblast Area
	LC-SS-01	LC-SS-02	LC-SS-03	LC-SS-04	LC-SS-05	LC-SS-06	LC-SB-01	LC-SB-02	LC-SB-03	LC-SB-04	LC-SB-05
SODIUM	-	-	-	-	510	490	-	830	2200	410	350
VANADIUM	-	12	3.8	-	16	18	4.5	63	40	26	19
ZINC	14	410	25	110	2600	2140	7	56	630	58	21

- Material analyzed for but not detected above minimum quantitation limit

J Estimated value

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The highest concentrations of organotin compounds on the property were found in the sandblast area near the rails. However, other samples taken in the sandblast area farther away from the rails contained no significant organotin levels. The surface soil sample contained dibutyl tin (7 times estimated MQL) and tributyl tin (15 times estimated MQL). The subsurface soil sample was collected between the rails and contained monobutyl tin (3.8 times estimated MQL), dibutyl tin (37 times MQL), and tributyl tin (38 times MQL). Levels of total tin were 6 times above the estimated MQL in the subsurface soil sample in the sandblast area. Another organotin, chlorotris(methylpropyl)stannane, was tentatively identified at an estimated concentration of 20,000 ug/kg in the subsurface soil sample taken between the rails. This compound is representative of the intermediates used in the preparation of commercially important organotins (Ref. 19, p. 61). Inorganic tin is the final degradation product of organotin compounds. The results from the special analytical services are summarized in Table 10.

Sediment samples were collected in Williamson Creek. The sample adjacent to the sandblast area was collected at an outfall pipe. It is unknown where on the property this pipe originates, as neither it nor a nearby storm drain appears on the blueprint of the facility (Ref. 29). No organic compounds were detected at significant concentrations in either this sample or in the downgradient sample. Organic analytical results for sediments are summarized in Table 11.

Six metals were found at significant concentrations in sediment from Williamson Creek adjacent to the sandblast area. The metals of concern are barium (4 times control), cadmium (17 times control), copper (65 times control), lead (51 times control), nickel (185 times MQL), and zinc (15 times control). Significant levels of cadmium (13 times MQL), copper (4.6 times MQL), and lead (4 times control) were found at the creek mouth. This indicates that these metals may be migrating from their point of deposition to the Wilmington River. Inorganic analytical results for sediments are presented in Table 12.

Dibutyl tin (8 times MQL) and tributyl tin (7 times MQL) were found at significant levels in the sediments adjacent to the sandblast area. Total tin was found at 8 times (estimated) the MQL in this area. Chlorotris(methylpropyl)stannane was also tentatively identified in this sample. However, the downgradient sample contained no detectable levels of tin or tin compounds. The results for sediments from special analytical services are summarized in Table 13.

TABLE 10

SUMMARY OF SPECIAL ANALYTICAL SERVICES  
SURFACE AND SUBSURFACE SOIL SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS	Background	Haz. Waste Storage (HWS)	Sandblast Area		Stain Near HWS	Overflow Sandblast Area	Background	South End of Yard Near HWS	Sandblast Area		Overflow Sandblast Area
	LC-SS-01	LC-SS-02	LC-SS-03	LC-SS-04	LC-SS-05	LC-SS-06	LC-SB-01	LC-SB-02	LC-SB-03	LC-SB-04	LC-SB-05
MONOBUTYL TIN (ug/kg)	-	99JC	44JC	-	NA	32JC	-	-	93JC	-	-
DIBUTYL TIN (ug/kg)	-	310C	170C	33N	NA	81C	-	-	930C	-	-
TRIBUTYL TIN (ug/kg)	-	410JC	370C	35N	NA	93C	-	35N	970C	31N	40N
TIN (mg/kg)	-	11J	-	-	NA	180J	-	-	35J	19J	-

- Material analyzed for but not detected above minimum quantitation limit  
 J Estimated value  
 N Presumptive evidence of presence of material  
 C Confirmed by GCMS  
 NA Not analyzed

TABLE 11

SUMMARY OF ORGANIC ANALYTICAL RESULTS  
SEDIMENT SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (ug/kg)	Control Wilmington River	Center of Basin	Downgradient Wilmington River	Control Williamson Creek	Creek Near Paint Shop	Mouth of Williamson Creek
	LC-SD-01	LC-SD-02	LC-SD-03	LC-SD-04	LC-SD-05	LC-SD-06
PURGEABLE COMPOUNDS						
CHLOROFORM	-	-	4J	2J	-	-
EXTRACTABLE COMPOUNDS						
FLUORANTHENE	180J	-	-	-	380J	-
PYRENE	210J	-	-	-	-	-
BENZO(A)ANTHRACENE	110J	-	-	-	-	-
CHRYSENE	110J	-	-	-	190J	74J
BENZO(B AND/OR K)FLUORANTHENE	140J	-	-	-	130J	220J
BENZO-A-PYRENE	-	-	-	-	150J	87J
ETHANEDIOL MONOACETATE	-	-	3000JN	-	-	-
CHLOROTRIS(METHYLPROPYL)STANNANE	-	-	-	-	1000JN	-
UNIDENTIFIED COMPOUNDS/NO.	3000J/2	-	-	-	700J/1	2000J/2

- Material analyzed for but not detected above minimum quantitation limit

J Estimated value

N Presumptive evidence of presence of material

TABLE 12

SUMMARY OF INORGANIC ANALYTICAL RESULTS  
SEDIMENT SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS (mg/kg)	Control River	Center of Basin	Downgradient River	Control Creek	Creek Near Paint Shop	Creek Mouth
	LC-SD-01	LC-SD-02	LC-SD-03	LC-SD-04	LC-SD-05	LC-SD-06
ALUMINUM	10,000	52,000	2200	23,000	26,000	23,000
ARSENIC	3.9J	19J	-	5.5J	7.9J	-
BARIUM	13	-	-	28	100	23
BERYLLIUM	-	-	-	-	2.5	-
CADMIUM	-	14	-	-	17	13
CALCIUM	6400J	3400J	7000J	10,000J	3400J	9400J
CHROMIUM	19J	78J	4.6J	33J	54J	30J
COBALT	-	21	-	8.9	14	13
COPPER	-	34	-	6.3	410	29
IRON	10,000J	41,000J	2200J	19,000J	27,000J	19,000J
LEAD	10	34	3.9	9.9	510	44
MAGNESIUM	1900	8600	590	4800	3700	3800
MANGANESE	76J	310J	22J	160J	170J	93J
NICKEL	-	-	-	-	74	-
POTASSIUM	750	4200	240	2300	3600	3100
SODIUM	4300	22,000	2000	4600	12,000	13,000
VANADIUM	27	110	8.6	45	56	50
ZINC	32	97	-	60	940	55

- Material analyzed for but not detected above minimum quantitation limit  
J Estimated value

TABLE 13

SUMMARY OF SPECIAL ANALYTICAL SERVICES  
SEDIMENT SAMPLES  
LATEX CONSTRUCTION  
THUNDERBOLT, CHATHAM COUNTY, GEORGIA

PARAMETERS	Control River	Center of Basin	Downgradient River	Control Creek	Creek Near Paint Shop	Creek Mouth
	LC-SD-01	LC-SD-02	LC-SD-03	LC-SD-04	LC-SD-05	LC-SD-06
DIBUTYL TIN (ug/kg)	-	-	-	-	270C	-
TRIBUTYL TIN (ug/kg)	32N	-	-	-	620C	-
TIN (mg/kg)	-	-	-	-	90J	-

- Material analyzed for but not detected above minimum quantitation limit  
 J Estimated value  
 N Presumptive evidence of presence of material  
 C Confirmed by GCMS

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#### 4.2.3.2 Overflow Sandblast Area

A surface and a subsurface soil sample were collected in the overflow sandblast area. No significant concentrations of organic contaminants were found in the samples. Organic analytical results are presented in Table 8.

Fifteen metals were detected in the surface soil sample at concentrations ranging from 3 to 185 times background or MCL. The metals of concern are arsenic (3.5 times MQL, estimated), barium (5 times background), beryllium (6 times MQL), cadmium (19 times MQL), chromium (45 times estimated MQL), cobalt (7 times MQL), copper (185 times MQL), lead (35 times background), nickel (42 times MQL), and zinc (152 times background). Nine metals were detected in the subsurface soil sample at concentrations ranging from 3 to 26 times background or MCL. The metals of concern are arsenic (26 times MQL, estimated), cadmium (3 times MQL), vanadium (4 times background), and zinc (3 times background). Inorganic analytical results are presented in Table 9.

Dibutyl tin (3 times estimated MQL) and tributyl tin (4 times estimated MQL) were found in surface soils. Chlorotris(methylpropyl)stannane was also tentatively identified in this sample. Total tin was found at 42 times the MQL in the surface soil sample. No significant levels of tin or organotin compounds were found in the subsurface soil sample. The results from the special analytical services are summarized in Table 10.

#### 4.2.3.3 Hazardous Waste Storage

Two surface soil and a subsurface soil sample were collected near the hazardous waste storage area. One surface soil sample was collected from a stain adjacent to the area, and one was collected below a drain in the diking surrounding the area. The subsurface soil sample was collected at a distance southeast of the storage area because of difficulty advancing the bore hole through subsurface debris adjacent to the storage area. The stain contained high concentrations of three PAHs, 2-methylnaphthalene (estimated at 56 times MQL), fluorene (estimated at 51 times MQL), and phenanthrene (102 times MQL). Gamma-chlordane was detected in the stain at 10 times the MQL. An additional 17 unidentified extractable compounds were found at an estimated concentration of 5,000,000 ug/kg. No significant levels of organic contaminants were found in the other two samples. The stain and resulting contamination are likely the result of poor housekeeping practices in the hazardous waste storage area. The organic analytical results are summarized in Table 8.

The surface soil sample collected below the drain contained nine metals at levels significantly above background. The metals of concern are arsenic (estimated 3 times MQL), chromium (estimated

15 times estimated MQL), cobalt (3 times MQL), copper (21 times MQL), lead (8 times background), and zinc (29 times background). Sixteen metals were detected at significant levels in the stain, with concentrations ranging between 4 and 185 times background. The majority of metals found in the stain can be related to waste oils. The subsurface soil sample contained elevated levels of 10 metals. The metals of concern in this sample are barium (3.7 times background), chromium (estimated 10 times background), vanadium (14 times background), and zinc (8 times background). Inorganic results are summarized in Table 9.

The only significant levels of organotins in the hazardous waste storage area were found below the drain. Mono- (4 times MQL), di- (12 times MQL), and tributyl (16 times estimated MQL) tins were found. Chlorotris(methylpropyl)stannane was also tentatively identified in this sample. Total tin was not found at significant levels. The results from special analytical services are summarized in Table 10.

#### 4.2.3.4 Basin

A sample was collected in the basin and another was collected downstream. No significant concentrations of organic or organotin compounds were found in either sample. The organic results and the results from specified analytical services are summarized in Tables 11 and 13.

Thirteen metals were found at significant levels in the center of the basin, and the concentrations ranged from 3 to 13 times the control. The metals of concern are arsenic (5 times control, estimated), cadmium (14 times MQL), chromium (4 times control, estimated), cobalt (5 times MQL), lead (3 times control), vanadium (4 times control), and zinc (3 times control). No significant levels of metals were found in the downgradient sample. It is possible that the contaminants in the basin have originated from the TMI marina. Inorganic analytical results are presented in Table 12.

## 5.0 SUMMARY

The field inspection of Latex Construction consisted of the collection of 17 environmental samples of sediment, surface, and subsurface soil. These samples were taken from four potential source areas and along likely migration pathways. Analytical results indicated the presence of a variety of organic and inorganic contaminants at the facility. Contamination was found in each of the source areas and in both surface and subsurface soil samples. Contamination from the sandblast area also appears to be entering Williamson Creek and the salt marsh along its banks.

Pathways of concern at the ship yard are surface water, air, onsite, and groundwater pathways. The surface water pathway is of concern because contamination was found in sediments of Williamson Creek. The surface waters and marshes provide habitats for a number of threatened and endangered species and also support a large amount of commercial and recreational fishing.

The air and onsite pathways are of concern because of contaminated surface soils onsite and because sandblasting continues to release potentially contaminated particulates. The facility is not only located in a residential area, it is also adjacent to a sensitive environment. Although the facility is fenced, restricting access from the land, the area is in an active boating community and access from the water is unhindered.

Almost all of Chatham County relies on groundwater as a source of drinking water. However, all wells in the area draw from below a thick confining layer, and the groundwater pathway is therefore of minor concern.

Based upon the field inspection, FIT 4 recommends that a Listing Site Inspection, Phase I, be conducted.

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 30791 SAMPLE TYPE. SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SS-03 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SS03 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
44JC UG/KG MONOBUTYL TIN  
170C UG/KG DIBUTYL TIN  
370C UG/KG TRIBUTYL TIN  
22UR UG/KG MONOPHENYL TIN  
22UJ UG/KG DIPHENYL TIN  
22U UG/KG TRIPHENYL TIN  
5.30J MG/KG TIN  
10 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*\*\*  
PROJECT NO. 89-537 SAMPLE NO. 39793 SAMPLE TYPE. SOIL PROG FILE: NSF COLLECTED BY: G CARTON  
SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA  
STATION ID: LC-SS-04 COLLECTION START: 09/11/89 STOP: 00/00/00  
CASE NO.: 12698 SAS NO.: 4921D D. NO.: SS04 MD NO:  
\*\*\*\*\*

RESULTS UNITS PARAMETER  
27UJ UG/KG MONOBUTYL TIN  
33N UG/KG DIBUTYL TIN  
35N UG/KG TRIBUTYL TIN  
27UR UG/KG MONOPHENYL TIN  
27UJ UG/KG DIPHENYL TIN  
27U UG/KG TRIPHENYL TIN  
7.9UJ MG/KG TIN  
25 % % MOISTURE

..FOOTNOTES..

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** * * * *
** PROJECT NO. 89-537   SAMPLE NO. 39788   SAMPLE TYPE. SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE. LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: LC-SB-01   COLLECTION START: 09/11/89   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 49210   D. NO.: SBO1   MO NO:   **
** * * * * *

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RESULTS  UNITS  PARAMETER
25UJ  UG/KG  MONOBUTYL TIN
25U  UG/KG  DIBUTYL TIN
25U  UG/KG  TRIBUTYL TIN
25UR  UG/KG  MONOPHENYL TIN
25UJ  UG/KG  DIPHENYL TIN
25U  UG/KG  TRIPHENYL TIN
6UJ  MG/KG  TIN
19 %  %  MOISTURE

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\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39792 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SB-03 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SB03 MD NO: \*\*  
\*\*

\*\*\*  
RESULTS UNITS PARAMETER  
93JC UG/KG MONOBUTYL TIN  
930C UG/KG DIBUTYL TIN  
970C UG/KG TRIBUTYL TIN  
31UR UG/KG MONOPHENYL TIN  
31UJ UG/KG DIPHENYL TIN  
31U UG/KG TRIPHENYL TIN  
35J MG/KG TIN  
35 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39794 SAMPLE TYPE. SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SB-04 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SB04 MD NO: \*\*  
\*\* \*\*

RESULTS UNITS PARAMETER  
26UJ UG/KG MONOBUTYL TIN  
26U UG/KG DIBUTYL TIN  
31N UG/KG TRIBUTYL TIN  
26UR UG/KG MONOPHENYL TIN  
26UJ UG/KG DIPHENYL TIN  
26U UG/KG TRIPHENYL TIN  
19J MG/KG TIN  
25 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39796   SAMPLE TYPE. SOIL   PROG. FILE. NSF   COLLECTED BY: G CARTON   **
** SOURCE. LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: LC-SB-05   COLLECTION START: 09/11/89   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: SB05   MD NO:   **
**
***

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RESULTS  UNITS  PARAMETER
25UJ UG/KG MONOBUTYL TIN
25U UG/KG DIBUTYL TIN
40N UG/KG TRIBUTYL TIN
25UR UG/KG MONOPHENYL TIN
25UJ UG/KG DIPHENYL TIN
25U UG/KG TRIPHENYL TIN
8 4UJ MG/KG TIN
20 % % MOISTURE

```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*I-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39797 SAMPLE TYPE. SOIL PROG. FILE. NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE. LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SD-01 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD01 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
30UJ UG/KG MONOBUTYL TIN  
30U UG/KG DIBUTYL TIN  
32N UG/KG TRIBUTYL TIN  
30UR UG/KG MONOPHENYL TIN  
30UJ UG/KG DIPHENYL TIN  
30U UG/KG TRIPHENYL TIN  
90U MG/KG TIN  
33 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*I-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537      SAMPLE NO. 39798      SAMPLE TYPE. SOIL      PROG FIRM: NSF      COLLECTED BY: G CARTON      \*\*  
\*\* SOURCE: LATEX CONSTRUCTION      CITY: SAVANNAH      ST: GA      \*\*  
\*\* STATION ID: LC-SD-02      COLLECTION START: 09/11/89      STOP: 00/00/00      \*\*  
\*\* CASE NO.: 12698      SAS NO.: 4921D      D. NO.: SD02      MD NO:      \*\*  
\*\*  
\*\*\*

RESULTS    UNITS    PARAMETER  
65UJ UG/KG MONOBUTYL TIN  
65U UG/KG DIBUTYL TIN  
65U UG/KG TRIBUTYL TIN  
65UR UG/KG MONOPHENYL TIN  
65UJ UG/KG DIPHENYL TIN  
65U UG/KG TRIPHENYL TIN  
16UJ MG/KG TIN  
70 %      % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE      \*NA-NOT ANALYZED      \*NAI-INTERFERENCES      \*J-ESTIMATED VALUE      \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN      \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** **
** PROJECT NO. 89-537 SAMPLE NO. 39700 SAMPLE TYPE. SOIL PROG FIRM. NSF COLLECTED BY: G CARTON **
** SOURCE. LATEX CONSTRUCTION CITY: SAVANNAH ST: GA **
** STATION ID: LC-SD-03 COLLECTION START: 09/11/89 STOP. 00/00/00 **
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD03 MD NO: **
**
*** **

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RESULTS UNITS PARAMETER
26UJ UG/KG MONOBUTYL TIN
26U UG/KG DIBUTYL TIN
26U UG/KG TRIBUTYL TIN
26UR UG/KG MONOPHENYL TIN
26UJ UG/KG DIPHENYL TIN
26U UG/KG TRIPHENYL TIN
6.70U MG/KG TIN
22 % % MOISTURE

```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATLANTA, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\* \* \* \* \*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39800 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SD-04 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD04 MD NO: \*\*  
\*\* \* \* \* \* \*

RESULTS UNITS PARAMETER  
320J UG/KG MONOBUTYL TIN  
320J UG/KG DIBUTYL TIN  
80U UG/KG TRIBUTYL TIN  
320R UG/KG MONOPHENYL TIN  
320J UG/KG DIPHENYL TIN  
320 UG/KG TRIPHENYL TIN  
110J MG/KG TIN  
38 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAT-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39801 SAMPLE TYPE. SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SD-05 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD05 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
38UJ UG/KG MONOBUTYL TIN  
270C UG/KG DIBUTYL TIN  
620C UG/KG TRIBUTYL TIN  
38UR UG/KG MONOPHENYL TIN  
38UJ UG/KG DIPHENYL TIN  
38U UG/KG TRIPHENYL TIN  
90J MG/KG TIN  
48 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** ****
** PROJECT NO. 89-537 SAMPLE NO. 39802 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON **
** SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA **
** STATION ID: LC-SD-06 COLLECTION START: 09/11/89 STOP: 00/00/00 **
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD06 MD NO: **
** ****
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RESULTS UNITS PARAMETER
41UJ UG/KG MONOBUTYL TIN
130U UG/KG DIBUTYL TIN
41U UG/KG TRIBUTYL TIN
41UR UG/KG MONOPHENYL TIN
41UJ UG/KG DIPHENYL TIN
41U UG/KG TRIPHENYL TIN
130J MG/KG TIN
52 % % MOISTURE
```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 39797   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: LC-SS-01   COLLECTION START: 09/11/89   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: 01   MD NO:   **
** ** ** **

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RESULTS UNITS PARAMETER
26UJ UG/KG MONOBUTYL TIN
26U UG/KG DIBUTYL TIN
26U UG/KG TRIBUTYL TIN
26UR UG/KG MONOPHENYL TIN
26UJ UG/KG DIPHENYL TIN
26U UG/KG TRIPHENYL TIN
4.2UJ MG/KG TIN
24 % % MOISTURE

```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATLANTA, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39789 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SS-02 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SS02 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
99JC UG/KG MONOBUTYL TIN  
310C UG/KG DIBUTYL TIN  
410JC UG/KG TRIBUTYL TIN  
22UR UG/KG MONOPHENYL TIN  
22UJ UG/KG DIPHENYL TIN  
22U UG/KG TRIPHENYL TIN  
11J MG/KG TIN  
11 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 30791 SAMPLE TYPE: SOIL PROG. FIRM: NSF COLLECTED BY: G. CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SS-03 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SS03 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
44JC UG/KG MONOBUTYL TIN  
170C UG/KG DIBUTYL TIN  
370C UG/KG TRIBUTYL TIN  
22UR UG/KG MONOPHENYL TIN  
22UJ UG/KG DIPHENYL TIN  
22U UG/KG TRIPHENYL TIN  
5.30UJ MG/KG TIN  
10 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 39793   SAMPLE TYPE. SOIL   PROG. FILE. NSF   COLLECTED BY: G. CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: LC-SS-04   COLLECTION START: 09/11/89   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: SS04   MD NO:   **
** ** ** **
```

```
RESULTS UNITS PARAMETER
270J UG/KG MONOBUTYL TIN
33N UG/KG DIBUTYL TIN
35N UG/KG TRIBUTYL TIN
270R UG/KG MONOPHENYL TIN
270J UG/KG DIPHENYL TIN
270 UG/KG TRIPHENYL TIN
7.90J MG/KG TIN
25 % % MOISTURE
```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537 SAMPLE NO. 39769 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON **
** SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA **
** STATION ID: SB-01 COLLECTION START: 09/11/89 1255 STOP: 00/00/00 **
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: N368 MD NO: N368 **
** ** ** **
```

RESULTS UNITS PARAMETER  
1.30 MC/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

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*** *****  
** PROJECT NO. 89-537   SAMPLE NO. 39771   SAMPLE TYPE. SOIL   PROG FILE NSF   COLLECTED BY: G CARTON   **  
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **  
** STATION ID: SB-02   COLLECTION START: 09/11/89 1445   STOP: 00/00/00   **  
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N370   MD NO: N370   **  
** *****
```

RESULTS UNITS PARAMETER  
1.7U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A- AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 39773   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SB-03   COLLECTION START: 09/11/89   1615   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N372   MD NO: N372   **
** ** ** **
```

RESULTS UNITS PARAMETER  
1.5U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

## 11/01/89

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** PROJECT NO. 89-537    SAMPLE NO. 39775    SAMPLE TYPE: SOIL    PROG FILE: NSF    COLLECTED BY: G CARTON
** SOURCE: LATEX CONSTRUCTION    CITY: SAVANNAH    ST: GA
** STATION ID: SB-04    COLLECTION START: 09/11/89    1735    STOP: 00/00/00
** CASE NO.: 12698    SAS NO.: 4921D    D. NO.: P236    MD NO: Q236
**

```

RESULTS	UNITS	PARAMETER
1.40	MG/KG	CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

11/01/89

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** PROJECT NO.: 89-537      SAMPLE NO.: 30778   SAMPLE TYPE: SOIL    PROG FILE: NSF       COLLECTED BY: G CARTON **  
** SOURCE: LATEX CONSTRUCTION                                CITY: SAVANNAH        ST: GA                **  
** STATION ID: SB-05                                           COLLECTION START: 09/12/89 1005 STOP: 00/00/00 **  
** CASE NO.: 12698          SAS NO.: 4921D         D. NO.: P239           MD NO.: Q239          **
```

RESULTS	UNITS	PARAMETER
1.30	MG/KG	CYANIDE

\*\*\*FOOTNOTES\*\*\*

FOOTNOTES\*\*\*  
 \*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39779 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-01 COLLECTION START: 09/12/89 1300 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 1269R SAS NO.: 4921D D. NO.: P240 MD NO.: Q240 \*\*  
\*\*\* \*\*

RESULTS UNITS PARAMETER  
1.6U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\* \*\* \*\* \*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39780 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-02 COLLECTION START: 09/12/89 1335 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P241 MD NO: Q241 \*\*  
\*\* \*\* \*\* \*\*

RESULTS UNITS PARAMETER  
3.7U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATLANTA, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

```
*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 30781   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SD-03   COLLECTION START: 09/12/89   1440   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P242   MD NO: Q242   **
** ** ** **
```

RESULTS UNITS PARAMETER  
1.30 MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

## 11/01/89

```

** PROJECT NO. 89-537 SAMPLE NO. 39782 SAMPLE TYPE: SOIL          PROG FILE: NSF COLLECTED BY: G CARTON
** SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA
** STATION ID: SD-04 COLLECTION START: 09/12/89 1510 STOP: 00/00/00
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: P243 MD NO.: Q243
**
***

```

RESULTS	UNITS	PARAMETER
1.60	MG/KG	CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRFSENCE OF MATERIAL  
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\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

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*** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **  
** PROJECT NO. 89-537 SAMPLE NO. 39783 SAMPLE TYPE. SOIL PROG FILE: NSF COLLECTED BY: G CARTON **  
** SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA **  
** STATION ID: SD-05 COLLECTION START: 09/12/89 1550 STOP: 00/00/00 **  
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: P244 MD NO: Q244 **  
** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **  
*** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **
```

RESULTS UNITS PARAMETER  
1.00 MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

```
*** ****
** PROJECT NO. 89-537   SAMPLE NO. 39784   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SD-06   COLLECTION START: 09/12/89   1610   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P245   MD NO: Q245   **
** ****
```

RESULTS UNITS PARAMETER  
2.1U MC/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

```
*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 39768   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-01   COLLECTION START: 09/11/89   1245   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N367   MD NO: N367   **
** ** ** **
```

RESULTS UNITS PARAMETER  
1.1U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 39770   SAMPLE TYPE. SOIL   PROG. FILE. NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-02   COLLECTION START: 09/11/89   1410   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N369   MD NO: N369   **
** ** ** **
```

RESULTS UNITS PARAMETER  
1.1U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 39772   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-03   COLLECTION START: 09/11/89   1605   STOP: 00/00/00   **
** CASE NO. 12698   SAS NO.: 4921D   D. NO.: N371   MD NO: N371   **
** ** ** **
```

RESULTS UNITS PARAMETER  
1.1U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A- AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

```
*** ****
** PROJECT NO. 89-537   SAMPLE NO. 39774   SAMPLE TYPE. SOIL   PROG FILE. NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-04   COLLECTION START: 09/11/89 1715   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N373   MD NO: N373   **
** ****
*** ****
```

RESULTS UNITS PARAMETER  
1.2U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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SAMPLE AND ANALYSIS MANAGFMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT

```
*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 39776   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-05   COLLECTION START: 09/12/89   0845   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P237   MD NO: Q237   **
** ** ** **
```

RESULTS UNITS PARAMETER  
1.1U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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SAMPLE AND ANALYSIS MANAGFMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

SPECIFIED ANALYSIS DATA REPORT!

```
*** ****
** PROJFCI NO. 89-537   SAMPLE NO. 39777   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-06   COLLECTION START: 09/12/89   0950   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P238   MD NO: Q238   **
** ****
```

RESULTS UNITS PARAMETER  
1.1U MG/KG CYANIDE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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SAMPLE AND ANALYSIS MANAGEMENT SYSIFM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39769 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-01 COLLECTION START: 09/11/89 1255 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: N368 \*\*  
\*\*\*

MG/KG  
5300 ALUMINUM  
30U ANTIMONY  
0.53UJ ARSENIC  
10 BARIUM  
0.53U BERYLLIUM  
0.79U CADMIUM  
880J CALCIUM  
5J CHROMIUM  
4U COBALT  
4U COPPER  
910J IRON  
7U LEAD  
140 MAGNESIUM

ANALYTICAL RESULTS

MG/KG  
16J MANGANESE  
0.13U MERCURY  
5.3U NICKEL  
150U POTASSIUM  
0.53U SELENIUM  
1.6UR SILVER  
340U SODIUM  
0.53UR THALLIUM  
NA TIN  
4.5 VANADIUM  
7 ZINC  
24 PERCENT MOISTURE

ANALYTICAL RESULTS

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39771 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-02 COLLECTION START: 09/11/89 1445 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: N370 \*\*  
\*\*

MG/KG ANALYTICAL RESULTS

33000 ALUMINUM  
20U ANTIMONY  
70U ARSENIC  
37 BARIUM  
0.68U BERYLLIUM  
3U CADMIUM  
27000J CALCIUM  
49J CHROMIUM  
11 COBALT  
20U COPPER  
22000J IRON  
13 LEAD  
8300 MAGNESIUM

MG/KG ANALYTICAL RESULTS

220J MANGANESE  
0.17U MERCURY  
6.8U NICKEL  
2300 POTASSIUM  
0.68U SILFNIUM  
2UR SILVER  
830 SODIUM  
0.68UR THALLIUM  
NA TIN  
63 VANADIUM  
56 ZINC  
41 PFRCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39773 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-03 COLLECTION START: 09/11/89 1615 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: N372 \*\*  
\*\*\*

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
20000	ALUMINUM	180J	MANGANESE
20U	ANTIMONY	0.15U	MERCURY
8.8J	ARSENIC	0.1U	NICKEL
64	BARIUM	1900	POTASSIUM
0.61U	BERYLLIUM	0.61U	SILFNIUM
5.8	CADMIUM	1.8UR	SILVER
4900J	CALCIUM	2200	SODIUM
39J	CHROMIUM	0.61UR	THALLIUM
11	COBALT	NA	TIN
460	COPPER	40	VANADIUM
24000J	IRON	630	ZINC
95	LEAD	35	PERCENT MOISTURE
2400	MAGNESIUM		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39775 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-04 COLLECTION START: 09/11/89 1735 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: Q236 \*\*  
\*\*\*

MG/KG  
11000 ALUMINUM  
1000 ANTIMONY  
300 ARSENIC  
17 BARIUM  
10 BERYLLIUM  
2.7 CADMIUM  
37000 CALCIUM  
18J CHROMIUM  
5.8 COBALT  
48 COPPER  
9500J IRON  
14 LEAD  
1500 MAGNESIUM

ANALYTICAL RESULTS

MG/KG  
83J MANGANESE  
0.14U MERCURY  
5.7U NICKEL  
1000 POTASSIUM  
0.57U SELENIUM  
1.7UR SILVER  
410 SODIUM  
0.57UR THALLIUM  
NA TIN  
26 VANADIUM  
58 ZINC  
30 PERCENT MOISTURE

ANALYTICAL RESULTS

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39778 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-05 COLLECTION START: 09/12/89 1005 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: Q239 \*\*  
\*\*

MG/KG ANALYTICAL RESULTS

8200 ALUMINUM  
9.1U ANTIMONY  
14J ARSENIC  
14 BARIUM  
0.52U BERYLLIUM  
2.6 CADMIUM  
9700J CALCIUM  
13J CHROMIUM  
3.1U COBALT  
20U COPPER  
6400J IRON  
17 LEAD  
960 MAGNESIUM

MG/KG ANALYTICAL RESULTS

90J MANGANESE  
0.18 MERCURY  
20U NICKEL  
440 POTASSIUM  
1U SELFNIIUM  
1.6UR SILVER  
350 SODIUM  
0.52UR THALLIUM  
NA TIN  
19 VANADIUM  
21 ZINC  
23 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537    SAMPLE NO. 39779    SAMPLE TYPE: SOIL    PROG ELEM: NSF    COLLECTED BY: G CARTON    \*\*  
\*\* SOURCE: LATEX CONSTRUCTION    CITY: SAVANNAH    ST: GA    \*\*  
\*\* STATION ID: SD-01    COLLECTION START: 09/12/89    1300    STOP: 00/00/00    \*\*  
\*\* CASE NUMBER: 12698    SAS NUMBER: 4921D    MD NUMBER: Q240    \*\*  
\*\*\*

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
10000	ALUMINUM	76J	MANGANESE
20U	ANTIMONY	0.16U	MERCURY
3.9J	ARSENIC	20U	NICKEL
13	BARIUM	750	POTASSIUM
0.65U	BERYLLIUM	0.65U	SELENIUM
0.93U	CADMIUM	20R	SILVER
6400J	CALCIUM	4300	SODIUM
19J	CHROMIUM	0.65UR	THALLIUM
3.9U	COBALT	NA	TIN
30U	COPPER	27	VANADIUM
10000J	IRON	32	ZINC
10	LEAD	39	PERCENT MOISTURE
1900	MAGNESIUM		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39780 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-02 COLLECTION START: 09/12/89 1335 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: Q241 \*\*  
\*\*

\*\*\*  
MG/KG ANALYTICAL RESULTS  
52000 ALUMINUM  
3000 ANTIMONY  
19J ARSENIC  
54 BARIUM  
30 BERYLLIUM  
14 CADMIUM  
3400J CALCIUM  
78J CHROMIUM  
21 COBALT  
34 COPPER  
41000J IRON  
34 LEAD  
8600 MAGNESIUM

\*\*\*  
MG/KG ANALYTICAL RESULTS  
310J MANGANESE  
0.37U MERCURY  
00U NICKEL  
4200 POTASSIUM  
1.5U SFLINTUM  
4.4UR SILVER  
22000 SODIUM  
1.5UR THALLIUM  
NA TIN  
110 VANADIUM  
97 ZINC  
73 PFRCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

- \*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39781 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-03 COLLECTION START: 09/12/89 1440 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: Q242 \*\*  
\*\*

MG/KG ANALYTICAL RESULTS

2200 ALUMINUM  
9U ANTIMONY  
2UJ ARSENIC  
6.5U BARIUM  
0.52U BERYLLIUM  
0.78U CADMIUM  
7000J CALCIUM  
4.6J CHROMIUM  
3.1U COBALT  
4U COPPER  
2200J IRON  
3.9 LEAD  
590 MAGNESIUM

MG/KG ANALYTICAL RESULTS

22J MANGANESE  
0.13U MERCURY  
5.2U NICKEL  
240 POTASSIUM  
0.52U SELLINIUM  
1.6UR SILVER  
2000 SODIUM  
0.52UR THALLIUM  
NA TIN  
8.6 VANADIUM  
5U ZINC  
23 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39782 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH SI: GA \*\*  
\*\* STATION ID: SD-04 COLLECTION START: 09/12/89 1510 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: Q243 \*\*  
\*\*

MG/KG  
23000 ALUMINUM  
200 ANTIMONY  
5.5J ARSENIC  
28 BARIUM  
10 BERYLLIUM  
0.96U CADMIUM  
10000J CALCIUM  
33J CHROMIUM  
8.9 COBALT  
6.3 COPPER  
19000J IRON  
9.9 LEAD  
4800 MAGNESIUM

ANALYTICAL RESULTS

MG/KG  
160J MANGANESE  
0.16U MERCURY  
0.4U NICKEL  
2300 POTASSIUM  
0.64U SFLNIUM  
1.9UR SILVER  
4600 SODIUM  
0.64UR THALLIUM  
NA TIN  
45 VANADIUM  
60 ZINC  
38 PERCENT MOISTURE

ANALYTICAL RESULTS

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39783 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH SI: GA \*\*  
\*\* STATION ID: SD-05 COLLECTION START: 09/12/89 1550 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: Q244 \*\*  
\*\*\*

MG/KG ANALYTICAL RESULTS

26000 ALUMINUM  
130 ANTIMONY  
7.9J ARSENIC  
100 BARIUM  
2.5 BERYLLIUM  
17 CADMIUM  
3400J CALCIUM  
54J CHROMIUM  
14 COBALT  
410 COPPER  
27000J IRON  
510 LEAD  
3700 MAGNESIUM

MG/KG ANALYTICAL RESULTS

170J MANGANESE  
0.190 MERCURY  
74 NICKEL  
3600 POTASSIUM  
0.74U SELENIUM  
2.2UR SILVER  
12000 SODIUM  
0.74UR THALLIUM  
NA TIN  
56 VANADIUM  
940 ZINC  
46 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39784 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-06 COLLECTION START: 09/12/89 1610 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: Q245 \*\*  
\*\*\*

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
23000	ALUMINUM	93J	MANGANESE
30U	ANTIMONY	0.21U	MERCURY
0.82UJ	ARSENIC	30U	NICKEL
23	BARIUM	3100	POTASSIUM
1U	BERYLLIUM	0.82U	SFL ENIUM
13	CADMIUM	2.5UR	SILVER
9400J	CALCIUM	13000	SODIUM
30J	CHROMIUM	0.82UR	THALLIUM
13	COBALT	NA	TIN
29	COPPER	50	VANADIUM
19000J	IRON	55	ZINC
44	LEAD	51	PERCENT MOISTURE
3800	MAGNESIUM		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39768 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-01 COLLECTION START: 09/11/89 1245 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: N367 \*\*  
\*\*\*

MG/KG ANALYTICAL RESULTS

5800 ALUMINUM  
20U ANTIMONY  
10J ARSENIC  
26 BARIUM  
0.45U BERYLLIUM  
0.68U CADMIUM  
1700J CALCIUM  
20J CHROMIUM  
2.7U COBALT  
7U COPPER  
2800J IRON  
22 LEAD  
260 MAGNESIUM

MG/KG ANALYTICAL RESULTS

74J MANGANESE  
0.11U MERCURY  
4.5U NICKEL  
150 POTASSIUM  
0.45U SELENIUM  
1.4UR SILVER  
290U SODIUM  
0.45UR THALLIUM  
NA TIN  
2.5U VANADIUM  
14 ZINC  
12 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

METALS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39770   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-02   COLLECTION START: 09/11/89   1410   STOP: 00/00/00   **
** CASE NUMBER: 12698   SAS NUMBER: 4921D   MD NUMBER: N369   **
**

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MG/KG ANALYTICAL RESULTS

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7700 ALUMINUM
7.80 ANTIMONY
3.1J ARSENIC
59 BARIUM
0.45U BERYLLIUM
0.67U CADMIUM
3700J CALCIUM
33J CHROMIUM
8.5 COBALT
150 COPPER
12000J IRON
190 LEAD
850 MAGNESIUM

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MG/KG ANALYTICAL RESULTS

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98J MANGANESE
0.13 MERCURY
4.5U NICKEL
790 POTASSIUM
0.45U SELENIUM
1.3UR SILVER
290U SODIUM
0.45UR THALLIUM
NA TIN
12 VANADIUM
410 ZINC
10 PERCENT MOISTURE

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\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEIALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39772 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH SI: GA \*\*  
\*\* STATION ID: SS-03 COLLECTION START: 09/11/89 1605 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: N371 \*\*  
\*\*\*

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
3100	ALUMINUM	11J	MANGANESE
7.8U	ANTIMONY	0.11U	MERCURY
0.45UJ	ARSENIC	4.5U	NICKEL
7U	BARIUM	120U	POTASSIUM
0.45U	BERYLLIUM	0.45U	SELENIUM
0.67U	CADMIUM	1.3UR	SILVER
450J	CALCIUM	290U	SODIUM
2.4J	CHROMIUM	0.45UR	THALLIUM
4U	COBALT	NA	TIN
30U	COPPER	3.8	VANADIUM
760J	IRON	25	ZINC
14	LEAD	10	PERCENT MOISTURE
130U	MAGNESIUM		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39774 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-04 COLLECTION START: 09/11/89 1715 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 GAS NUMBER: 4921D MD NUMBER: N373 \*\*  
\*\*\*

MG/KG ANALYTICAL RESULTS		MG/KG ANALYTICAL RESULTS	
1700	ALUMINUM	24J	MANGANESE
40H	ANTIMONY	0.12U	MERCURY
20J	ARSENIC	4.8U	NICKEL
7U	BARIUM	210	POTASSIUM
0.48U	BERYLLIUM	0.48U	SELENIUM
0.72U	CADMIUM	1.4UR	SILVER
3700J	CALCIUM	310U	SODIUM
5.2J	CHROMIUM	0.48UR	THALLIUM
2.9U	COBALT	NA	TIN
30U	COPPER	2.7U	VANADIUM
2700J	IRON	110	ZINC
18	LEAD	17	PERCENT MOISTURE
240	MAGNESIUM		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39776 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-05 COLLECTION START: 09/12/89 0845 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D MD NUMBER: Q237 \*\*  
\*\*\*

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
7600	ALUMINUM	560J	MANGANESE
7.5U	ANTIMONY	1.2	MERCURY
3J	ARSENIC	230	NICKEL
100	BARIUM	990	POTASSIUM
2.8	BERYLLIUM	0.43U	SELENIUM
14	CADMIUM	1.3UR	SILVER
8600J	CALCIUM	510	SODIUM
97J	CHROMIUM	0.43UR	THALLIUM
30	COBALT	NA	TIN
1700	COPPER	16	VANADIUM
36000J	IRON	2600	ZINC
1500	LEAD	06	PERCENT MOISTURE
1300	MAGNESIUM		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

11/01/89

MEALS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39777 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G. CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-06 COLLECTION START: 09/12/89 0950 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 49210 MD NUMBER: Q238 \*\*  
\*\*

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
8000	ALUMINUM	270J	MANGANESE
200	ANTIMONY	0.11U	MERCURY
3.5J	ARSENIC	190	NICKEL
130	BARIUM	1000	POTASSIUM
2.9	BERYLLIUM	0.45U	SELENIUM
13	CADMIUM	1.3UR	SILVER
6800J	CALCIUM	490	SODIUM
91J	CHROMIUM	0.45UR	THALLIUM
19	COBALT	NA	TIN
1300	COPPER	18	VANADIUM
33000J	IRON	2140	ZINC
770	LEAD	10	PERCENT MOISTURE
1100	MAGNESIUM		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39769 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: 58-01 COLLECTION START: 09/11/89 1255 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N368 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

13UJ CHLOROMETHANE  
13U BROMOMETHANE  
13U VINYL CHLORIDE  
13U CHLOROETHANE  
30U METHYLENE CHLORIDE  
13UJ ACETONE  
7U CARBON DISULFIDE  
7U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
7U 1,1-DICHLOROETHANE  
7U 1,2-DICHLOROETHENE (TOTAL)  
5J CHLOROFORM  
7U 1,2-DICHLOROETHANE  
13U METHYL ETHYL KETONE  
7U 1,1,1-TRICHLOROETHANE  
7UJ CARBON TETRACHLORIDE  
13U VINYL ACETATE  
7U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

7U 1,2-DICHLOROPROPANE  
7U CIS-1,3-DICHLOROPROPENE  
7U TRICHLOROETHENE(TRICHLOROETHYLENE)  
7UJ DIBROMOCHLOROMETHANE  
7U 1,1,2-TRICHLOROETHANE  
7U BENZENE  
7U TRANS-1,3-DICHLOROPROPENE  
7U BROMOFORM  
13U METHYL ISOBUTYL KETONE  
13U METHYL BUTYL KETONE  
7U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
7U 1,1,2,2-TETRACHLOROETHANE  
7U TOLUENE  
7U CHLOROBENZENE  
7U ETHYL BENZENE  
7U STYRENE  
7U TOTAL XYLENES  
25 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39771 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-02 COLLECTION START: 09/11/89 1445 STOP: 00/00/00 \*\*

\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N370 \*\*  
\*\*\* \*\*

UG/KG ANALYTICAL RESULTS

19UJ CHLOROMETHANE  
19U BROMOMETHANE  
19U VINYL CHLORIDE  
19U CHLOROETHANE  
70U METHYLENE CHLORIDE  
30UJ ACETONE  
9U CARBON DISULFIDE  
9U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
9U 1,1-DICHLOROETHANE  
9U 1,2-DICHLOROETHENE (TOTAL)  
9J CHLOROFORM  
9U 1,2-DICHLOROETHANE  
19U METHYL ETHYL KETONE  
9U 1,1,1-TRICHLOROETHANE  
9UJ CARBON TETRACHLORIDE  
19U VINYL ACETATE  
9U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

9U 1,2-DICHLOROPROPANE  
9U CIS-1,3-DICHLOROPROPENE  
9U TRICHLOROETHENE(TRICHLOROETHYLENE)  
9UJ DIBROMOCHLOROMETHANE  
9U 1,1,2-TRICHLOROETHANE  
9U BENZENE  
9U TRANS-1,3-DICHLOROPROPENE  
9U BROMOFORM  
19U METHYL ISOBUTYL KETONE  
19U METHYL BUTYL KETONE  
9U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
9U 1,1,2,2-TETRACHLOROETHANE  
3J TOLUENE  
9U CHLOROBENZENE  
9U ETHYL BENZENE  
9U STYRENE  
9U TOTAL XYLENES  
46 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39773 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-03 COLLECTION START: 09/11/89 1615 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N372 \*\*  
\*\*\* \*\*

UG/KG ANALYTICAL RESULTS  
18UJ CHLOROMETHANE  
18U BROMOMETHANE  
18U VINYL CHLORIDE  
18U CHLOROETHANE  
200U METHYLENE CHLORIDE  
70UJ ACETONE  
9U CARBON DISULFIDE  
9U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
9U 1,1-DICHLOROETHANE  
9U 1,2-DICHLOROETHENE (TOTAL)  
4J CHLOROFORM  
9U 1,2-DICHLOROETHANE  
18U METHYL ETHYL KETONE  
9U 1,1,1-TRICHLOROETHANE  
9UJ CARBON TETRACHLORIDE  
18U VINYL ACETATE  
9U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS  
9U 1,2-DICHLOROPROPANE  
9U CIS-1,3-DICHLOROPROPENE  
9U TRICHLOROETHENE(TRICHLOROETHYLENE)  
9UJ DIBROMOCHLOROMETHANE  
9U 1,1,2-TRICHLOROETHANE  
9U BENZENE  
9U TRANS-1,3-DICHLOROPROPENE  
9U BROMOFORM  
18U METHYL ISOBUTYL KETONE  
18U METHYL BUTYL KETONE  
9U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
9U 1,1,2,2-TETRACHLOROETHANE  
7J TOLUENE  
9U CHLOROBENZENE  
21 ETHYL BENZENE  
9U STYRENE  
28 TOTAL XYLENES  
45 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

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*** * * * *
** PROJECT NO. 89-537   SAMPLE NO. 39775   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SB-04   COLLECTION START: 09/11/89   1735   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P236   **
*** * * * *
  
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UG/KG ANALYTICAL RESULTS

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12UJ CHLOROMETHANE
12U  BROMOMETHANE
12U  VINYL CHLORIDE
12U  CHLOROETHANE
30UJ METHYLENE CHLORIDE
20U  ACETONE
6U   CARBON DISULFIDE
6U   1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
6U   1,1-DICHLOROETHANE
6U   1,2-DICHLOROETHENE (TOTAL)
6U   CHLOROFORM
6U   1,2-DICHLOROETHANE
12U  METHYL ETHYL KETONE
6U   1,1,1-TRICHLOROETHANE
6U   CARBON TETRACHLORIDE
12U  VINYL ACETATE
6U   BROMODICHLOROMETHANE
  
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UG/KG ANALYTICAL RESULTS

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6U  1,2-DICHLOROPROPANE
6U  CIS-1,3-DICHLOROPROPENE
6UJ TRICHLOROETHENE(TRICHLOROETHYLENE)
6UJ DIBROMOCHLOROMETHANE
6U  1,1,2-TRICHLOROETHANE
6U  BENZENE
6U  TRANS-1,3-DICHLOROPROPENE
6U  BROMOFORM
12U METHYL ISOBUTYL KETONE
12U METHYL BUTYL KETONE
6U  TETRACHLOROETHENE(TETRACHLOROETHYLENE)
6U  1,1,2,2-TETRACHLOROETHANE
6U  TOLUENE
6U  CHLOROBENZENE
6U  ETHYL BENZENE
6U  STYRENE
6U  TOTAL XYLENES
18  PERCENT MOISTURE
  
```

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
 \*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39778 SAMPLE TYPE: SOIL  
\*\* SOURCE: LATEX CONSTRUCTION  
\*\* STATION ID: SB-05  
\*\*

\*\*\*  
\*\* PROG ELEM: NSF COLLECTED BY: G CARTON  
\*\* CITY: SAVANNAH ST: GA  
\*\* COLLECTION START: 09/12/89 1005 STOP: 00/00/00  
\*\*

\*\*\* CASE NO.: 12698 SAS NO.: 4921D

D. NO.: P239

UG/KG

ANALYTICAL RESULTS

13UJ CHLOROMETHANE  
13U BROMOMETHANE  
13U VINYL CHLORIDE  
13U CHLOROETHANE  
30UJ METHYLENE CHLORIDE  
30U ACETONE  
6U CARBON DISULFIDE  
6U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
6U 1,1-DICHLOROETHANE  
6U 1,2-DICHLOROETHENE (TOTAL)  
2J CHLOROFORM  
6U 1,2-DICHLOROETHANE  
13U METHYL ETHYL KETONE  
6U 1,1,1-TRICHLOROETHANE  
6U CARBON TETRACHLORIDE  
13U VINYL ACETATE  
6U BROMODICHLOROMETHANE

UG/KG

ANALYTICAL RESULTS

6U 1,2-DICHLOROPROPANE  
6U CIS-1,3-DICHLOROPROPENE  
6UJ TRICHLOROETHENE(TRICHLOROETHYLENE)  
6UJ DIBROMOCHLOROMETHANE  
6U 1,1,2-TRICHLOROETHANE  
6U BENZENE  
6U TRANS-1,3-DICHLOROPROPENE  
6U BROMOFORM  
13U METHYL ISOBUTYL KETONE  
13U METHYL BUTYL KETONE  
6U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
6U 1,1,2,2-TETRACHLOROETHANE  
2J TOLUENE  
6U CHLOROBENZENE  
6U ETHYL BENZENE  
6U STYRENE  
6U TOTAL XYLENES  
21 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39779 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-01 COLLECTION START: 09/12/89 1300 STOP: 00/00/00 \*\*  
\*\*

\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P240 \*\*

\*\*\* UG/KG ANALYTICAL RESULTS UG/KG ANALYTICAL RESULTS \*\*\*

17UJ CHLOROMETHANE  
17U BROMOMETHANE  
17U VINYL CHLORIDE  
17U CHLOROETHANE  
40UJ METHYLENE CHLORIDE  
17U ACETONE  
8U CARBON DISULFIDE  
8U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
8U 1,1-DICHLOROETHANE  
8U 1,2-DICHLOROETHENE (TOTAL)  
8U CHLOROFORM  
8U 1,2-DICHLOROETHANE  
17U METHYL ETHYL KETONE  
8U 1,1,1-TRICHLOROETHANE  
8U CARBON TETRACHLORIDE  
17U VINYL ACETATE  
8U BROMODICHLOROMETHANE

8U 1,2-DICHLOROPROPANE  
8U CIS-1,3-DICHLOROPROPENE  
8UJ TRICHLOROETHENE(TRICHLOROETHYLENE)  
8UJ DIBROMOCHLOROMETHANE  
8U 1,1,2-TRICHLOROETHANE  
8U BENZENE  
8U TRANS-1,3-DICHLOROPROPENE  
8U BROMOFORM  
17U METHYL ISOBUTYL KETONE  
17U METHYL BUTYL KETONE  
8U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
8U 1,1,2,2-TETRACHLOROETHANE  
8U TOLUENE  
8U CHLOROBENZENE  
8U ETHYL BENZENE  
8U STYRENE  
8U TOTAL XYLENES  
40 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39780 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-02 COLLECTION START: 09/12/89 1335 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P241 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

37UJ CHLOROMETHANE  
37U BROMOMETHANE  
37U VINYL CHLORIDE  
37U CHLOROETHANE  
90UJ METHYLENE CHLORIDE  
37U ACETONE  
19U CARBON DISULFIDE  
19U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
19U 1,1-DICHLOROETHANE  
19U 1,2-DICHLOROETHENE (TOTAL)  
19U CHLOROFORM  
19U 1,2-DICHLOROETHANE  
37U METHYL ETHYL KETONE  
19U 1,1,1-TRICHLOROETHANE  
19U CARBON TETRACHLORIDE  
37U VINYL ACETATE  
19U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

19U 1,2-DICHLOROPROPANE  
19U CIS-1,3-DICHLOROPROPENE  
19UJ TRICHLOROETHENE(TRICHLOROETHYLENE)  
19UJ DIBROMOCHLOROMETHANE  
19U 1,1,2-TRICHLOROETHANE  
19U BENZENE  
19U TRANS-1,3-DICHLOROPROPENE  
19U BROMOFORM  
37U METHYL ISOBUTYL KETONE  
37U METHYL BUTYL KETONE  
19U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
19U 1,1,2,2-TETRACHLOROETHANE  
19U TOLUENE  
19U CHLOROBENZENE  
19U ETHYL BENZENE  
19U STYRENE  
19U TOTAL XYLENES  
73 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\* PROJECT NO. 89-537 SAMPLE NO. 39781 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-03 COLLECTION START: 09/12/89 1440 STOP: 00/00/00 \*\*

\*\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P242 \*\*\*

UG/KG ANALYTICAL RESULTS

19UJ CHLOROMETHANE  
19U BROMOMETHANE  
19U VINYL CHLORIDE  
19U CHLOROETHANE  
60UJ METHYLENE CHLORIDE  
30U ACETONE  
10U CARBON DISULFIDE  
10U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
10U 1,1-DICHLOROETHANE  
10U 1,2-DICHLOROETHENE (TOTAL)  
4J CHLOROFORM  
10U 1,2-DICHLOROETHANE  
19U METHYL ETHYL KETONE  
10U 1,1,1-TRICHLOROETHANE  
10U CARBON TETRACHLORIDE  
19U VINYL ACETATE  
10U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

10U 1,2-DICHLOROPROPANE  
10U CIS-1,3-DICHLOROPROPENE  
10UJ TRICHLOROETHENE(TRICHLOROETHYLENE)  
10UJ DIBROMOCHLOROMETHANE  
10U 1,1,2-TRICHLOROETHANE  
10U BENZENE  
10U TRANS-1,3-DICHLOROPROPENE  
10U BROMOFORM  
19U METHYL ISOBUTYL KETONE  
19U METHYL BUTYL KETONE  
10U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
10U 1,1,2,2-TETRACHLOROETHANE  
10U TOLUENE  
10U CHLOROBENZENE  
10U ETHYL BENZENE  
10U STYRENE  
10U TOTAL XYLENES  
48 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39782 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-04 COLLECTION START: 09/12/89 1510 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P243 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

16UJ CHLOROMETHANE  
16U BROMOMETHANE  
16U VINYL CHLORIDE  
16U CHLOROETHANE  
40UJ METHYLENE CHLORIDE  
30U ACETONE  
8U CARBON DISULFIDE  
8U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
8U 1,1-DICHLOROETHANE  
8U 1,2-DICHLOROETHENE (TOTAL)  
2J CHLOROFORM  
8U 1,2-DICHLOROETHANE  
16U METHYL ETHYL KETONE  
8U 1,1,1-TRICHLOROETHANE  
8U CARBON TETRACHLORIDE  
16U VINYL ACETATE  
8U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

8U 1,2-DICHLOROPROPANE  
8U CIS-1,3-DICHLOROPROPENE  
8UJ TRICHLOROETHENE(TRICHLOROETHYLENE)  
8UJ DIBROMOCHLOROMETHANE  
8U 1,1,2-TRICHLOROETHANE  
8U BENZENE  
8U TRANS-1,3-DICHLOROPROPENE  
8U BROMOFORM  
16U METHYL ISOBUTYL KETONE  
16U METHYL BUTYL KETONE  
8U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
8U 1,1,2,2-TETRACHLOROETHANE  
8U TOLUENE  
8U CHLOROBENZENE  
8U ETHYL BENZENE  
8U STYRENE  
8U TOTAL XYLENES  
37 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39783 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON  
\*\* SOURCE: LAIEX CONSTRUCTION CITY: SAVANNAH ST: GA  
\*\* STATION ID: SD-05 COLLECTION START: 09/12/89 1550 STOP: 00/00/00  
\*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P244  
\*\*\*

UG/KG ANALYTICAL RESULTS

20UJ	CHLOROMETHANE
20U	BROMOMETHANE
20U	VINYL CHLORIDE
20U	CHLOROETHANE
60UJ	METHYLENE CHLORIDE
70U	ACETONE
10U	CARBON DISULFIDE
10U	1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
10U	1,1-DICHLOROETHANE
10U	1,2-DICHLOROETHENE (TOTAL)
10U	CHLOROFORM
10U	1,2-DICHLOROETHANE
20U	METHYL ETHYL KETONE
10U	1,1,1-TRICHLOROETHANE
10U	CARBON TETRACHLORIDE
20U	VINYL ACETATE
10U	BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

10U	1,2-DICHLOROPROPANE
10U	CIS-1,3-DICHLOROPROPENE
10UJ	TRICHLOROETHENE(TRICHLOROETHYLENE)
10UJ	DIBROMOCHLOROMETHANE
10U	1,1,2-TRICHLOROETHANE
10U	BENZENE
10U	TRANS-1,3-DICHLOROPROPENE
10U	BROMOFORM
20U	METHYL ISOBUTYL KETONE
20U	METHYL BUTYL KETONE
10U	TETRACHLOROETHENE(TETRACHLOROETHYLENE)
10U	1,1,2,2-TETRACHLOROETHANE
10U	TOLUENE
10U	CHLOROBENZENE
10U	ETHYL BENZENE
10U	STYRENE
10U	TOTAL XYLENES
50	PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39784 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA  
\*\* STATION ID: SD-06 COLLECTION START: 09/12/89 1610 STOP: 00/00/00  
\*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P245  
\*\*\*  
UG/KG ANALYTICAL RESULTS UG/KG ANALYTICAL RESULTS

21UJ CHLOROMETHANE  
21U BROMOMETHANE  
21U VINYL CHLORIDE  
21U CHLOROETHANE  
40U METHYLENE CHLORIDE  
21UJ ACETONE  
10U CARBON DISULFIDE  
10U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
10U 1,1-DICHLOROETHANE  
10U 1,2-DICHLOROETHENE (TOTAL)  
10U CHLOROFORM  
10U 1,2-DICHLOROETHANE  
21U METHYL ETHYL KETONE  
10U 1,1,1-TRICHLOROETHANE  
10UJ CARBON TETRACHLORIDE  
21U VINYL ACETATE  
10U BROMODICHLOROMETHANE

10U 1,2-DICHLOROPROPANE  
10U CIS-1,3-DICHLOROPROPENE  
10U TRICHLOROETHENE(TRICHLOROETHYLENE)  
10UJ DIBROMOCHLOROMETHANE  
10U 1,1,2-TRICHLOROETHANE  
10U BENZENE  
10U TRANS-1,3-DICHLOROPROPENE  
10U BROMOFORM  
21U METHYL ISOBUTYL KETONE  
21U METHYL BUTYL KETONE  
10U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
10U 1,1,2,2-TETRACHLOROETHANE  
10U TOLUENE  
10U CHLOROBENZENE  
10U ETHYL BENZENE  
10U STYRENE  
10U TOTAL XYLENES  
52 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

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\*\* PROJECT NO. 89-537 SAMPLE NO. 39768 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-01 COLLECTION START: 09/11/89 1245 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N367 \*\*  
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UG/KG ANALYTICAL RESULTS

11UJ CHLOROMETHANE  
11U BROMOMETHANE  
11U VINYL CHLORIDE  
11U CHLOROETHANE  
20U METHYLENE CHLORIDE  
11UJ ACETONE  
6U CARBON DISULFIDE  
6U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
6U 1,1-DICHLOROETHANE  
6U 1,2-DICHLOROETHENE (TOTAL)  
6U CHLOROFORM  
6U 1,2-DICHLOROETHANE  
11U METHYL ETHYL KETONE  
6U 1,1,1-TRICHLOROETHANE  
6UJ CARBON TETRACHLORIDE  
11U VINYL ACETATE  
6U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

6U 1,2-DICHLOROPROPANE  
6U CIS-1,3-DICHLOROPROPENE  
6U TRICHLOROETHENE(TRICHLOROETHYLENE)  
6UJ DIBROMOCHLOROMETHANE  
6U 1,1,2-TRICHLOROETHANE  
6U BENZENE  
6U TRANS-1,3-DICHLOROPROPENE  
6U BROMOFORM  
11U METHYL ISOBUTYL KETONE  
11U METHYL BUTYL KETONE  
6U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
6U 1,1,2,2-TETRACHLOROETHANE  
6U TOLUENE  
6U CHLOROBENZENE  
6U ETHYL BENZENE  
6U STYRENE  
6U TOTAL XYLENES  
12 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39770 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-02 COLLECTION START: 09/11/89 1410 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N369 \*\*  
\*\*\* \*\*

UG/KG ANALYTICAL RESULTS

11UJ CHLOROMETHANE  
11U BROMOMETHANE  
11U VINYL CHLORIDE  
11U CHLOROETHANE  
30U METHYLENE CHLORIDE  
30UJ ACETONE  
6U CARBON DISULFIDE  
6U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
6U 1,1-DICHLOROETHANE  
6U 1,2-DICHLOROETHENE (TOTAL)  
5J CHLOROFORM  
6U 1,2-DICHLOROETHANE  
11U METHYL ETHYL KETONE  
6U 1,1,1-TRICHLOROETHANE  
6UJ CARBON TETRACHLORIDE  
11U VINYL ACETATE  
6U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

6U 1,2-DICHLOROPROPANE  
6U CIS-1,3-DICHLOROPROPENE  
6U TRICHLOROETHENE(TRICHLOROETHYLENE)  
6UJ DIBROMOCHLOROMETHANE  
6U 1,1,2-TRICHLOROETHANE  
6U BENZENE  
6U TRANS-1,3-DICHLOROPROPENE  
6U BROMOFORM  
11U METHYL ISOBUTYL KETONE  
11U METHYL BUTYL KETONE  
6U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
6U 1,1,2,2-TETRACHLOROETHANE  
7 TOLUENE  
6U CHLOROBENZENE  
6U ETHYL BENZENE  
6U STYRENE  
6U TOTAL XYLENES  
11 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39772 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-03 COLLECTION START: 09/11/89 1605 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N371 \*\*  
\*\*\*  
UG/KG ANALYTICAL RESULTS UG/KG ANALYTICAL RESULTS

11UJ CHLOROMETHANE  
11U BROMOMETHANE  
11U VINYL CHLORIDE  
11U CHLOROETHANE  
50U METHYLENE CHLORIDE  
40UJ ACETONE  
6U CARBON DISULFIDE  
6U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
6U 1,1-DICHLOROETHANE  
6U 1,2-DICHLOROETHENE (TOTAL)  
4J CHLOROFORM  
6U 1,2-DICHLOROETHANE  
11U METHYL ETHYL KETONE  
6U 1,1,1-TRICHLOROETHANE  
6UJ CARBON TETRACHLORIDE  
11U VINYL ACETATE  
6U BROMODICHLOROMETHANE

6U 1,2-DICHLOROPROPANE  
6U CIS-1,3-DICHLOROPROPENE  
6U TRICHLOROETHENE(TRICHLOROETHYLENE)  
6UJ DIBROMOCHLOROMETHANE  
6U 1,1,2-TRICHLOROETHANE  
6U BENZENE  
6U TRANS-1,3-DICHLOROPROPENE  
6U BROMOFORM  
11U METHYL ISOBUTYL KETONE  
11U METHYL BUTYL KETONE  
6U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
6U 1,1,2,2-TETRACHLOROETHANE  
6U TOLUENE  
6U CHLOROBENZENE  
6U ETHYL BENZENE  
6U STYRENE  
6U TOTAL XYLENES  
10 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39774 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: 55-04 COLLECTION START: 09/11/89 1715 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N373 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

14UJ CHLOROMETHANE  
14U BROMOMETHANE  
14U VINYL CHLORIDE  
14U CHLOROETHANE  
40UJ METHYLENE CHLORIDE  
50U ACETONE  
7U CARBON DISULFIDE  
7U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
7U 1,1-DICHLOROETHANE  
7U 1,2-DICHLOROETHENE (TOTAL)  
6J CHLOROFORM  
7U 1,2-DICHLOROETHANE  
14U METHYL ETHYL KETONE  
7U 1,1,1-TRICHLOROETHANE  
7U CARBON TETRACHLORIDE  
14U VINYL ACETATE  
7U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

7U 1,2-DICHLOROPROPANE  
7U CIS-1,3-DICHLOROPROPENE  
7UJ TRICHLOROETHENE(TRICHLOROETHYLENE)  
7UJ DIBROMOCHLOROMETHANE  
7U 1,1,2-TRICHLOROETHANE  
7U BENZENE  
7U TRANS-1,3-DICHLOROPROPENE  
7U BROMOFORM  
14U METHYL ISOBUTYL KETONE  
14U METHYL BUTYL KETONE  
7U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
7U 1,1,2,2-TETRACHLOROETHANE  
3J TOLUENE  
7U CHLOROBENZENE  
7U ETHYL BENZENE  
7U STYRENE  
7U TOTAL XYLENES  
31 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39776 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: 55-05 COLLECTION START: 09/12/89 0845 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P237 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

11UJ CHLOROMETHANE  
11UJ BROMOMETHANE  
11U VINYL CHLORIDE  
11U CHLOROETHANE  
30UJ METHYLENE CHLORIDE  
50UJ ACETONE  
6UJ CARBON DISULFIDE  
6U 1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)  
6UJ 1,1-DICHLOROETHANE  
6U 1,2-DICHLOROETHENE (TOTAL)  
1J CHLOROFORM  
6U 1,2-DICHLOROETHANE  
11UJ METHYL ETHYL KETONE  
6U 1,1,1-TRICHLOROETHANE  
6U CARBON TETRACHLORIDE  
11UJ VINYL ACETATE  
6U BROMODICHLOROMETHANE

UG/KG ANALYTICAL RESULTS

6U 1,2-DICHLOROPROPANE  
6UJ CIS-1,3-DICHLOROPROPENE  
6U TRICHLOROETHENE(TRICHLOROETHYLENE)  
6UJ DIBROMOCHLOROMETHANE  
6U 1,1,2-TRICHLOROETHANE  
6U BENZENE  
6UJ TRANS-1,3-DICHLOROPROPENE  
6UJ BROMOFORM  
11UJ METHYL ISOBUTYL KETONE  
11UJ METHYL BUTYL KETONE  
6U TETRACHLOROETHENE(TETRACHLOROETHYLENE)  
6U 1,1,2,2-TETRACHLOROETHANE  
11 TOLUENE  
6U CHLOROBENZENE  
6U ETHYL BENZENE  
6U STYRENE  
2J TOTAL XYLENES  
10 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PURGEABLE ORGANICS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39777   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-06   COLLECTION START: 09/12/89   0950   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P238   **
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UG/KG      ANALYTICAL RESULTS
11UJ CHLOROMETHANE
11U  BROMOMETHANE
11U  VINYL CHLORIDE
11U  CHLOROETHANE
20UJ METHYLENE CHLORIDE
20U  ACETONE
5U   CARBON DISULFIDE
5U   1,1-DICHLOROETHENE(1,1-DICHLOROETHYLENE)
5U   1,1-DICHLOROETHANE
5U   1,2-DICHLOROETHENE (TOTAL)
2J   CHLOROFORM
5U   1,2-DICHLOROETHANE
11U  METHYL ETHYL KETONE
5U   1,1,1-TRICHLOROETHANE
5U   CARBON TETRACHLORIDE
11U  VINYL ACETATE
5U   BROMODICHLOROMETHANE
  
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UG/KG      ANALYTICAL RESULTS
5U   1,2-DICHLOROPROPANE
5U   CIS-1,3-DICHLOROPROPENE
5UJ  TRICHLOROETHENE(TRICHLOROETHYLENE)
5UJ  DIBROMOCHLOROMETHANE
5U   1,1,2-TRICHLOROETHANE
5U   BENZENE
5U   TRANS-1,3-DICHLOROPROPENE
5U   BROMOFORM
11U  METHYL ISOBUTYL KETONE
11U  METHYL BUTYL KETONE
5U   TETRACHLOROETHENE(TETRACHLOROETHYLENE)
5U   1,1,2,2-TETRACHLOROETHANE
2J   TOLUENE
5U   CHLOROBENZENE
5U   ETHYL BENZENE
5U   STYRENE
5U   TOTAL XYLENES
6    PERCENT MOISTURE
  
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\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
 \*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

\*\*\* PROJECT NO. 89-537 SAMPLE NO. 39769 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-01 COLLECTION START: 09/11/89 1255 STOP: 00/00/00 \*\*

\*\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N368 \*\*\*

UG/KG	ANALYTICAL RESULTS	UG/KG	ANALYTICAL RESULTS
440U	PHENOL	2100UJ	3-NITROANILINE
440U	BIS(2-CHLOROETHYL) ETHER	440U	ACENAPHTHENE
440U	2-CHLOROPHENOL	2100U	2,4-DINITROPHENOL
440U	1,3-DICHLOROBENZENE	2100UJ	4-NITROPHENOL
440U	1,4-DICHLOROBENZENE	440U	DIBENZOFURAN
440U	BENZYL ALCOHOL	440U	2,4-DINITROTOLUENE
440U	1,2-DICHLOROBENZENE	440U	DIETHYL PHTHALATE
440U	2-METHYLPHENOL	440U	4-CHLOROPHENYL PHENYL ETHER
440U	BIS(2-CHLOROISOPROPYL) ETHER	440U	FLUORENE
440U	(3-AND/OR 4-)METHYLPHENOL	2100U	4-NITROANILINE
440U	N-NITROSODI-N-PROPYLAMINE	2100U	2-METHYL-4,6-DINITROPHENOL
440U	HEXACHLOROETHANE	440U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
440U	NITROBENZENE	440U	4-BROMOPHENYL PHENYL ETHER
440U	ISOPHORONE	440U	HEXACHLOROETHANE (HCB)
440U	2-NITROPHENOL	2100U	PENTACHLOROPHENOL
440U	2,4-DIMETHYLPHENOL	440U	PHENANTHRENE
2100UJ	BENZOIC ACID	440U	ANTHRACENE
440U	BIS(2-CHLOROETHOXY) METHANE	440U	DI-N-BUTYLPHTHALATE
440U	2,4-DICHLOROPHENOL	440U	FLUORANTHENE
440U	1,2,4-TRICHLOROBENZENE	440U	PYRENE
440U	NAPHTHALENE	440U	BENZYL BUTYL PHTHALATE
440UJ	4-CHLOROANILINE	880UJ	3,3'-DICHLOROBENZIDINE
440U	HEXACHLOROBUTADIENE	440U	BENZO(A)ANTHRACENE
440U	4-CHLORO-3-METHYLPHENOL	440U	CHRYSENE
440U	2-METHYLNAPHTHALENE	440U	BIS(2-ETHYLHEXYL) PHTHALATE
440U	HEXACHLOROCYCLOPENTADIENE (HCCP)	440U	DI-N-OCTYLPHTHALATE
440U	2,4,6-TRICHLOROPHENOL	440U	BENZO(B AND/OR K)FLUORANTHENE
2100U	2,4,5-TRICHLOROPHENOL	440U	BENZO-A-PYRENE
440U	2-CHLORONAPHTHALENE	440U	INDENO (1,2,3-CD) PYRENE
2100U	2-NITROANILINE	440UJ	DIBENZO(A,H)ANTHRACENE
440U	DIMETHYL PHTHALATE	440U	BENZO(GH)PERYLENE
440U	ACENAPHTHYLENE	25	PERCENT MOISTURE
440U	2,6-DINITROTOLUENE		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537    SAMPLE NO. 39771    SAMPLE TYPE: SOIL  
\*\* SOURCE: LATEX CONSTRUCTION  
\*\* STATION ID: SB-02  
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\*\* PROG ELEM: NSF    COLLECTED BY: G CARTON  
\*\* CITY: SAVANNAH    ST: GA  
\*\* COLLECTION START: 09/11/89    1445    STOP: 00/00/00  
\*\*

\*\*\*  
\*\* CASE NO.: 12698    SAS NO.: 4921D    D. NO.: N370  
\*\*

\*\*\*  
UG/KG    ANALYTICAL RESULTS

610U PHENOL  
610U BIS(2-CHLOROETHYL) ETHER  
610U 2-CHLOROPHENOL  
610U 1,3-DICHLOROBENZENE  
610U 1,4-DICHLOROBENZENE  
610U BENZYL ALCOHOL  
610U 1,2-DICHLOROBENZENE  
610U 2-METHYLPHENOL  
610U BIS(2-CHLOROISOPROPYL) ETHER  
610U (3-AND/OR 4-)METHYLPHENOL  
610U N-NITROSODI-N-PROPYLAMINE  
610U HEXACHLOROETHANE  
610U NITROBENZENE  
610U ISOPHORONE  
610U 2-NITROPHENOL  
610U 2,4-DIMETHYLPHENOL  
3000UJ BENZOIC ACID  
610U BIS(2-CHLOROETHOXY) METHANE  
610U 2,4-DICHLOROPHENOL  
610U 1,2,4-TRICHLOROBENZENE  
610U NAPHTHALENE  
610UJ 4-CHLOROANILINE  
610U HEXACHLOROBUTADIENE  
610U 4-CHLORO-3-METHYLPHENOL  
610U 2-METHYLNAPHTHALENE  
610U HEXACHLOROCYCLOPENTADIENE (HCCP)  
610U 2,4,6-TRICHLOROPHENOL  
3000U 2,4,5-TRICHLOROPHENOL  
610U 2-CHLORONAPHTHALENE  
3000U 2-NITROANILINE  
610U DIMETHYL PHTHALATE  
610U ACENAPHTHYLENE  
610U 2,6-DINITROTOLUENE

\*\*\*  
UG/KG    ANALYTICAL RESULTS

3000UJ 3-NITROANILINE  
610U ACENAPHTHENE  
3000U 2,4-DINITROPHENOL  
3000UJ 4-NITROPHENOL  
610U DIBENZOFURAN  
610U 2,4-DINITROTOLUENE  
610U DIETHYL PHTHALATE  
610U 4-CHLOROPHENYL PHENYL ETHER  
610U FLUORENE  
3000U 4-NITROANILINE  
3000U 2-METHYL-4,6-DINITROPHENOL  
610U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE  
610U 4-BROMOPHENYL PHENYL ETHER  
610U HEXACHLOROEBENZENE (HCB)  
3000U PENTACHLOROPHENOL  
610U PHENANTHRENE  
610U ANTHRACENE  
610U DI-N-BUTYLPHTHALATE  
610U FLUORANTHENE  
89J PYRENE  
610U BENZYL BUTYL PHTHALATE  
1200UJ 3,3'-DICHLOROBENZIDINE  
610U BENZO(A)ANTHRACENE  
610U CHRYSENE  
610U BIS(2-ETHYLHEXYL) PHTHALATE  
610U DI-N-OCTYLPHTHALATE  
610U BENZO(B AND/OR K)FLUORANTHENE  
610U BENZO-A-PYRENE  
610U INDENO (1,2,3-CD) PYRENE  
610UJ DIBENZO(A,H)ANTHRACENE  
610U BENZO(GHI)PERYLENE  
46 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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*** **
** PROJECT NO. 89-537   SAMPLE NO. 39773   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA
** STATION ID: SB-03   COLLECTION START: 09/11/89 1615   STOP: 00/00/00
**

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** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N372
*** **
UG/KG   ANALYTICAL RESULTS   UG/KG   ANALYTICAL RESULTS

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600U PHENOL
600U BIS(2-CHLOROETHYL) ETHER
600U 2-CHLOROPHENOL
600U 1,3-DICHLOROBENZENE
600U 1,4-DICHLOROBENZENE
600U BENZYL ALCOHOL
600U 1,2-DICHLOROBENZENE
600U 2-METHYLPHENOL
600U BIS(2-CHLOROISOPROPYL) ETHER
600U (3-AND/OR 4-)METHYLPHENOL
600U N-NITROSODI-N-PROPYLAMINE
600U HEXACHLOROETHANE
600UJ NITROBENZENE
600U ISOPHORONE
600U 2-NITROPHENOL
600U 2,4-DIMETHYLPHENOL
2900UJ BENZOIC ACID
600U BIS(2-CHLOROETHOXY) METHANE
600U 2,4-DICHLOROPHENOL
600U 1,2,4-TRICHLOROBENZENE
600U NAPHTHALENE
600UJ 4-CHLOROANILINE
600U HEXACHLOROBUTADIENE
600U 4-CHLORO-3-METHYLPHENOL
600U 2-METHYLNAPHTHALENE
600U HEXACHLOROCYCLOPENTADIENE (HCCP)
600U 2,4,6-TRICHLOROPHENOL
2900U 2,4,5-TRICHLOROPHENOL
600U 2-CHLORONAPHTHALENE
2900UJ 2-NITROANILINE
600U DIMETHYL PHTHALATE
600U ACENAPHTHYLENE
600U 2,6-DINITROTOLUENE

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2900UJ 3-NITROANILINE
300J ACENAPHTHENE
2900U 2,4-DINITROPHENOL
2900UJ 4-NITROPHENOL
600U DIBENZOFURAN
600U 2,4-DINITROTOLUENE
600U DIETHYL PHTHALATE
600U 4-CHLOROPHENYL PHENYL ETHER
600U FLUORENE
2900U 4-NITROANILINE
2900U 2-METHYL-4,6-DINITROPHENOL
600U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
600U 4-BROMOPHENYL PHENYL ETHER
600U HEXACHLOROBENZENE (HCB)
2900U PENTACHLOROPHENOL
1600 PHENANTHRENE
250J ANTHRACENE
600U DI-N-BUTYLPHTHALATE
1900 FLUORANTHENE
2400 PYRENE
600U BENZYL BUTYL PHTHALATE
1200UJ 3,3'-DICHLOROBENZIDINE
930 BENZO(A)ANTHRACENE
1200 CHRYSENE
800U BIS(2-ETHYLHEXYL) PHTHALATE
600U DI-N-OCTYLPHTHALATE
680J BENZO(B AND/OR K)FLUORANTHENE
1000 BENZO-A-PYRENE
380J INDENO (1,2,3-CD) PYRENE
150J DIBENZO(A,H)ANTHRACENE
460J BENZO(GHI)PERYLENE
45 PERCENT MOISTURE

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\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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*A-AVERAGE VALUE   *NA-NOT ANALYZED   *NAI-INTERFERENCES   *J-ESTIMATED VALUE   *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN   *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

```

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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*** **
** PROJECT NO. 89-537   SAMPLE NO. 39775   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SB-04   COLLECTION START: 09/11/89   1735   STOP: 00/00/00   **
**
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P236   **
*** **
UG/KG   ANALYTICAL RESULTS   UG/KG   ANALYTICAL RESULTS

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400U PHENOL
400U BIS(2-CHLOROETHYL) ETHER
400U 2-CHLOROPHENOL
400U 1,3-DICHLOROBENZENE
400U 1,4-DICHLOROBENZENE
400U BENZYL ALCOHOL
400U 1,2-DICHLOROBENZENE
400U 2-METHYLPHENOL
400U BIS(2-CHLOROISOPROPYL) ETHER
400U (3-AND/OR 4-)METHYLPHENOL
400U N-NITROSODI-N-PROPYLAMINE
400U HEXACHLOROETHANE
400UJ NITROBENZENE
400U ISOPHORONE
400U 2-NITROPHENOL
400U 2,4-DIMETHYLPHENOL
2000UJ BENZOIC ACID
400U BIS(2-CHLOROETHOXY) METHANE
400U 2,4-DICHLOROPHENOL
400U 1,2,4-TRICHLOROBENZENE
400U NAPHTHALENE
400UJ 4-CHLOROANILINE
400U HEXACHLOROBUTADIENE
400U 4-CHLORO-3-METHYLPHENOL
400U 2-METHYLNAPHTHALENE
400U HEXACHLOROCYCLOPENTADIENE (HCCP)
400U 2,4,6-TRICHLOROPHENOL
2000U 2,4,5-TRICHLOROPHENOL
400U 2-CHLORONAPHTHALENE
2000UJ 2-NITROANILINE
400U DIMETHYL PHTHALATE
400U ACENAPHTHYLENE
400U 2,6-DINITROTOLUENE

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2000UJ 3-NITROANILINE
400U ACENAPHTHENE
2000U 2,4-DINITROPHENOL
2000UJ 4-NITROPHENOL
400U DIBENZOFURAN
400U 2,4-DINITROTOLUENE
400U DIETHYL PHTHALATE
400U 4-CHLOROPHENYL PHENYL ETHER
400U FLUORENE
2000U 4-NITROANILINE
2000U 2-METHYL-4,6-DINITROPHENOL
400U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
400U 4-BROMOPHENYL PHENYL ETHER
400U HEXACHLOROBENZENE (HCB)
2000U PENTACHLOROPHENOL
400U PHENANTHRENE
400U ANTHRACENE
400U DI-N-BUTYLPHTHALATE
51J FLUORANTHENE
60J PYRENE
400U BENZYL BUTYL PHTHALATE
810UJ 3,3'-DICHLOROBENZIDINE
400U BENZO(A)ANTHRACENE
400U CHRYSENE
400U BIS(2-ETHYLHEXYL) PHTHALATE
400U DI-N-OCTYLPHTHALATE
400U BENZO(B AND/OR K)FLUORANTHENE
400U BENZO-A-PYRENE
400U INDENO (1,2,3-CD) PYRENE
400U DIBENZO(A,H)ANTHRACENE
400U BENZO(GHI)PERYLENE
18 PERCENT MOISTURE

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\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
 \*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39778   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA
** STATION ID: SB-05   COLLECTION START: 09/12/89   1005   STOP: 00/00/00
**
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P239
***
  
```

UG/KG                      ANALYTICAL RESULTS

420U PHENOL  
420U BIS(2-CHLOROETHYL) ETHER  
420U 2-CHLOROPHENOL  
420U 1,3-DICHLOROBENZENE  
420U 1,4-DICHLOROBENZENE  
420U BENZYL ALCOHOL  
420U 1,2-DICHLOROBENZENE  
420U 2-METHYLPHENOL  
420U BIS(2-CHLOROISOPROPYL) ETHER  
420U (3-AND/OR 4-)METHYLPHENOL  
420U N-NITROSODI-N-PROPYLAMINE  
420U HEXACHLOROETHANE  
420U NITROBENZENE  
420U ISOPHORONE  
420U 2-NITROPHENOL  
420U 2,4-DIMETHYLPHENOL  
2000UJ BENZOIC ACID  
420U BIS(2-CHLOROETHOXY) METHANE  
420U 2,4-DICHLOROPHENOL  
420U 1,2,4-TRICHLOROBENZENE  
420U NAPHTHALENE  
420UJ 4-CHLOROANILINE  
420U HEXACHLOROBUTADIENE  
420U 4-CHLORO-3-METHYLPHENOL  
420U 2-METHYLNAPHTHALENE  
420U HEXACHLOROCYCLOPENTADIENE (HCCP)  
420U 2,4,6-TRICHLOROPHENOL  
2000U 2,4,5-TRICHLOROPHENOL  
420U 2-CHLORONAPHTHALENE  
2000U 2-NITROANILINE  
420U DIMETHYL PHTHALATE  
420U ACENAPHTHYLENE  
420U 2,6-DINITROTOLUENE

UG/KG                      ANALYTICAL RESULTS

2000UJ 3-NITROANILINE  
420U ACENAPHTHENE  
2000U 2,4-DINITROPHENOL  
2000UJ 4-NITROPHENOL  
420U DIBENZOFURAN  
420U 2,4-DINITROTOLUENE  
420U DIETHYL PHTHALATE  
420U 4-CHLOROPHENYL PHENYL ETHER  
420U FLUORENE  
2000U 4-NITROANILINE  
2000U 2-METHYL-4,6-DINITROPHENOL  
420U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE  
420U 4-BROMOPHENYL PHENYL ETHER  
420U HEXACHLOROBENZENE (HCB)  
2000U PENTACHLOROPHENOL  
420U PHENANTHRENE  
420U ANTHRACENE  
420U DI-N-BUTYLPHTHALATE  
47J FLUORANTHENE  
420U PYRENE  
420U BENZYL BUTYL PHTHALATE  
840UJ 3,3'-DICHLOROBENZIDINE  
420U BENZO(A)ANTHRACENE  
420U CHRYSENE  
420U BIS(2-ETHYLHEXYL) PHTHALATE  
420U DI-N-OCTYLPHTHALATE  
420U BENZO(B AND/OR K)FLUORANTHENE  
420U BENZO-A-PYRENE  
420U INDENO (1,2,3-CD) PYRENE  
420UJ DIBENZO(A,H)ANTHRACENE  
420U BENZO(GHI)PERYLENE  
21 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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*** **
** PROJECT NO. 89-537   SAMPLE NO. 39779   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SD-01   COLLECTION START: 09/12/89   1300   STOP: 00/00/00   **
**
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P240   **
*** **
  
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UG/KG                      ANALYTICAL RESULTS

```

550U PHENOL
550U BIS(2-CHLOROETHYL) ETHER
550U 2-CHLOROPHENOL
550U 1,3-DICHLOROBENZENE
550U 1,4-DICHLOROBENZENE
550U BENZYL ALCOHOL
550U 1,2-DICHLOROBENZENE
550U 2-METHYLPHENOL
550U BIS(2-CHLOROISOPROPYL) ETHER
550U (3-AND/OR 4-)METHYLPHENOL
550U N-NITROSODI-N-PROPYLAMINE
550U HEXACHLOROETHANE
550U NITROBENZENE
550U ISOPHORONE
550U 2-NITROPHENOL
550U 2,4-DIMETHYLPHENOL
2700UJ BENZOIC ACID
550U BIS(2-CHLOROETHOXY) METHANE
550U 2,4-DICHLOROPHENOL
550U 1,2,4-TRICHLOROBENZENE
550U NAPHTHALENE
550UJ 4-CHLOROANILINE
550U HEXACHLOROBUTADIENE
550U 4-CHLORO-3-METHYLPHENOL
550U 2-METHYLNAPHTHALENE
550U HEXACHLOROCYCLOPENTADIENE (HCCP)
550U 2,4,6-TRICHLOROPHENOL
2700U 2,4,5-TRICHLOROPHENOL
550U 2-CHLORONAPHTHALENE
2700U 2-NITROANILINE
550U DIMETHYL PHTHALATE
550U ACENAPHTHYLENE
550U 2,6-DINITROTOLUENE
  
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UG/KG                      ANALYTICAL RESULTS

```

2700UJ 3-NITROANILINE
550U ACENAPHTHENE
2700U 2,4-DINITROPHENOL
2700UJ 4-NITROPHENOL
550U DIBENZOFURAN
550U 2,4-DINITROTOLUENE
550U DIETHYL PHTHALATE
550U 4-CHLOROPHENYL PHENYL ETHER
550U FLUORENE
2700U 4-NITROANILINE
2700U 2-METHYL-4,6-DINITROPHENOL
550U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
550U 4-BROMOPHENYL PHENYL ETHER
550U HEXACHLOROBENZENE (HCB)
2700U PENTACHLOROPHENOL
550U PHENANTHRENE
550U ANTHRACENE
550U DI-N-BUTYLPHTHALATE
180J FLUORANTHENE
210J PYRENE
550U BENZYL BUTYL PHTHALATE
1100UJ 3,3'-DICHLOROBENZIDINE
110J BENZO(A)ANTHRACENE
110J CHRYSENE
550U BIS(2-ETHYLHEXYL) PHTHALATE
550U DI-N-OCTYLPHTHALATE
140J BENZO(B AND/OR K)FLUORANTHENE
550U BENZO-A-PYRENE
550U INDENO (1,2,3-CD) PYRENE
550UJ DIBENZO(A,H)ANTHRACENE
550U BENZO(GH)PERYLENE
40 PERCENT MOISTURE
  
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\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
 \*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39780   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA
** STATION ID: SD-02   COLLECTION START: 09/12/89 1335   STOP: 00/00/00
**

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** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P241
***

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UG/KG                      ANALYTICAL RESULTS

```

1200U PHENOL
1200U BIS(2-CHLOROETHYL) ETHER
1200U 2-CHLOROPHENOL
1200U 1,3-DICHLOROBENZENE
1200U 1,4-DICHLOROBENZENE
1200U BENZYL ALCOHOL
1200U 1,2-DICHLOROBENZENE
1200U 2-METHYLPHENOL
1200U BIS(2-CHLOROISOPROPYL) ETHER
1200U (3-AND/OR 4-)METHYLPHENOL
1200U N-NITROSODI-N-PROPYLAMINE
1200U HEXACHLOROETHANE
1200UJ NITROBENZENE
1200U ISOPHORONE
1200U 2-NITROPHENOL
1200U 2,4-DIMETHYLPHENOL
5900UJ BENZOIC ACID
1200U BIS(2-CHLOROETHOXY) METHANE
1200U 2,4-DICHLOROPHENOL
1200U 1,2,4-TRICHLOROBENZENE
1200U NAPHTHALENE
1200UJ 4-CHLOROANILINE
1200U HEXACHLOROBUTADIENE
1200U 4-CHLORO-3-METHYLPHENOL
1200U 2-METHYLNAPHTHALENE
1200U HEXACHLOROCYCLOPENTADIENE (HCCP)
1200U 2,4,6-TRICHLOROPHENOL
5900U 2,4,5-TRICHLOROPHENOL
1200U 2-CHLORONAPHTHALENE
5900UJ 2-NITROANILINE
1200U DIMETHYL PHTHALATE
1200U ACENAPHTHYLENE
1200U 2,6-DINITROTOLUENE

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UG/KG                      ANALYTICAL RESULTS

```

5900UJ 3-NITROANILINE
1200U ACENAPHTHENE
5900U 2,4-DINITROPHENOL
5900UJ 4-NITROPHENOL
1200U DIBENZOFURAN
1200U 2,4-DINITROTOLUENE
1200U DIETHYL PHTHALATE
1200U 4-CHLOROPHENYL PHENYL ETHER
1200U FLUORENE
5900U 4-NITROANILINE
5900U 2-METHYL-4,6-DINITROPHENOL
1200U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
1200U 4-BROMOPHENYL PHENYL ETHER
1200U HEXACHLOROBENZENE (HCB)
5900U PENTACHLOROPHENOL
1200U PHENANTHRENE
1200U ANTHRACENE
1200U DI-N-BUTYLPHTHALATE
1200U FLUORANTHENE
1200U PYRENE
1200U BENZYL BUTYL PHTHALATE
2400UJ 3,3'-DICHLOROBENZIDINE
1200U BENZO(A)ANTHRACENE
1200U CHRYSENE
1200U BIS(2-ETHYLHEXYL) PHTHALATE
1200U DI-N-OCTYLPHTHALATE
1200U BENZO(B AND/OR K)FLUORANTHENE
1200U BENZO-A-PYRENE
1200U INDENO (1,2,3-CD) PYRENE
1200U DIBENZO(A,H)ANTHRACENE
1200U BENZO(GHI)PERYLENE
73 PERCENT MOISTURE

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\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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*A-AVERAGE VALUE   *NA-NOT ANALYZED   *NAI-INTERFERENCES   *J-ESTIMATED VALUE   *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN   *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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*** **
** PROJECT NO. 89-537   SAMPLE NO. 39781   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SD-03   COLLECTION START: 09/12/89   1440   STOP: 00/00/00   **
**
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P242   **
*** **
  
```

UG/KG                      ANALYTICAL RESULTS

630U PHENOL  
630U BIS(2-CHLOROETHYL) ETHER  
630U 2-CHLOROPHENOL  
630U 1,3-DICHLOROBENZENE  
630U 1,4-DICHLOROBENZENE  
630U BENZYL ALCOHOL  
630U 1,2-DICHLOROBENZENE  
630U 2-METHYLPHENOL  
630UJ BIS(2-CHLOROISOPROPYL) ETHER  
630U (3-AND/OR 4-)METHYLPHENOL  
630U N-NITROSODI-N-PROPYLAMINE  
630U HEXACHLOROETHANE  
630U NITROBENZENE  
630U ISOPHORONE  
630U 2-NITROPHENOL  
630U 2,4-DIMETHYLPHENOL  
3100U BENZOIC ACID  
630U BIS(2-CHLOROETHOXY) METHANE  
630U 2,4-DICHLOROPHENOL  
630U 1,2,4-TRICHLOROBENZENE  
630U NAPHTHALENE  
630U 4-CHLOROANILINE  
630U HEXACHLOROBUTADIENE  
630U 4-CHLORO-3-METHYLPHENOL  
630U 2-METHYLNAPHTHALENE  
630U HEXACHLOROCYCLOPENTADIENE (HCCP)  
630U 2,4,6-TRICHLOROPHENOL  
3100U 2,4,5-TRICHLOROPHENOL  
630U 2-CHLORONAPHTHALENE  
3100U 2-NITROANILINE  
630U DIMETHYL PHTHALATE  
630U ACENAPHTHYLENE  
630U 2,6-DINITROTOLUENE

UG/KG                      ANALYTICAL RESULTS

3100U 3-NITROANILINE  
630U ACENAPHTHENE  
3100U 2,4-DINITROPHENOL  
3100UJ 4-NITROPHENOL  
630U DIBENZOFURAN  
630U 2,4-DINITROTOLUENE  
630U DIETHYL PHTHALATE  
630U 4-CHLOROPHENYL PHENYL ETHER  
630U FLUORENE  
3100U 4-NITROANILINE  
3100U 2-METHYL-4,6-DINITROPHENOL  
630U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE  
630U 4-BROMOPHENYL PHENYL ETHER  
630U HEXACHLOROBENZENE (HCB)  
3100U PENTACHLOROPHENOL  
630U PHENANTHRENE  
630U ANTHRACENE  
630U DI-N-BUTYLPHTHALATE  
630U FLUORANTHENE  
630U PYRENE  
630U BENZYL BUTYL PHTHALATE  
1300UJ 3,3'-DICHLOROBENZIDINE  
630U BENZO(A)ANTHRACENE  
630U CHRYSENE  
630U BIS(2-ETHYLHEXYL) PHTHALATE  
630U DI-N-OCTYLPHTHALATE  
630UJ BENZO(B AND/OR K)FLUORANTHENE  
630U BENZO-A-PYRENE  
630U INDENO (1,2,3-CD) PYRENE  
630U DIBENZO(A,H)ANTHRACENE  
630U BENZO(GHI)PERYLENE  
48 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN

\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39782   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SD-04   COLLECTION START: 09/12/89   1510   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P243   **
***
  
```

UG/KG                      ANALYTICAL RESULTS

520U PHENOL  
520U BIS(2-CHLOROETHYL) ETHER  
520U 2-CHLOROPHENOL  
520U 1,3-DICHLOROBENZENE  
520U 1,4-DICHLOROBENZENE  
520U BENZYL ALCOHOL  
520U 1,2-DICHLOROBENZENE  
520U 2-METHYLPHENOL  
520UJ BIS(2-CHLOROISOPROPYL) ETHER  
520U (3-AND/OR 4-)METHYLPHENOL  
520U N-NITROSODI-N-PROPYLAMINE  
520U HEXACHLOROETHANE  
520U NITROBENZENE  
520U ISOPHORONE  
520U 2-NITROPHENOL  
520U 2,4-DIMETHYLPHENOL  
2500U BENZOIC ACID  
520U BIS(2-CHLOROETHOXY) METHANE  
520U 2,4-DICHLOROPHENOL  
520U 1,2,4-TRICHLOROBENZENE  
520U NAPHTHALENE  
520U 4-CHLOROANILINE  
520U HEXACHLOROBUTADIENE  
520U 4-CHLORO-3-METHYLPHENOL  
520U 2-METHYLNAPHTHALENE  
520U HEXACHLOROCYCLOPENTADIENE (HCCP)  
520U 2,4,6-TRICHLOROPHENOL  
2500U 2,4,5-TRICHLOROPHENOL  
520U 2-CHLORONAPHTHALENE  
2500U 2-NITROANILINE  
520U DIMETHYL PHTHALATE  
520U ACENAPHTHYLENE  
520U 2,6-DINITROTOLUENE

UG/KG                      ANALYTICAL RESULTS

2500U 3-NITROANILINE  
520U ACENAPHTHENE  
2500U 2,4-DINITROPHENOL  
2500UJ 4-NITROPHENOL  
520U DIBENZOFURAN  
520U 2,4-DINITROTOLUENE  
520U DIETHYL PHTHALATE  
520U 4-CHLOROPHENYL PHENYL ETHER  
520U FLUORENE  
2500U 4-NITROANILINE  
2500U 2-METHYL-4,6-DINITROPHENOL  
520U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE  
520U 4-BROMOPHENYL PHENYL ETHER  
520U HEXACHLOROBENZENE (HCB)  
2500U PENTACHLOROPHENOL  
520U PHENANTHRENE  
520U ANTHRACENE  
520U DI-N-BUTYLPHTHALATE  
520U FLUORANTHENE  
520U PYRENE  
520U BENZYL BUTYL PHTHALATE  
1000UJ 3,3'-DICHLOROBENZIDINE  
520U BENZO(A)ANTHRACENE  
520U CHRYSENE  
520U BIS(2-ETHYLHEXYL) PHTHALATE  
520U DI-N-OCTYLPHTHALATE  
520UJ BENZO(B AND/OR K)FLUORANTHENE  
520U BENZO-A-PYRENE  
520U INDENO (1,2,3-CD) PYRENE  
520U DIBENZO(A,H)ANTHRACENE  
520U BENZO(GHI)PERYLENE  
37 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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*** **
** PROJECT NO. 89-537   SAMPLE NO. 39783   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SD-05   COLLECTION START: 09/12/89   1550   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P244   **
*** **
  
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UG/KG                      ANALYTICAL RESULTS

```

660U PHENOL
660U BIS(2-CHLOROETHYL) ETHER
660U 2-CHLOROPHENOL
660U 1,3-DICHLOROBENZENE
660U 1,4-DICHLOROBENZENE
660U BENZYL ALCOHOL
660U 1,2-DICHLOROBENZENE
660U 2-METHYLPHENOL
660UJ BIS(2-CHLOROISOPROPYL) ETHER
660U (3-AND/OR 4-)METHYLPHENOL
660U N-NITROSODI-N-PROPYLAMINE
660U HEXACHLOROETHANE
660U NITROBENZENE
660U ISOPHORONE
660U 2-NITROPHENOL
660U 2,4-DIMETHYLPHENOL
3200U BENZOIC ACID
660U BIS(2-CHLOROETHOXY) METHANE
660U 2,4-DICHLOROPHENOL
660U 1,2,4-TRICHLOROBENZENE
660U NAPHTHALENE
660U 4-CHLOROANILINE
660U HEXACHLOROBUTADIENE
660U 4-CHLORO-3-METHYLPHENOL
660U 2-METHYLNAPHTHALENE
660U HEXACHLOROCYCLOPENTADIENE (HCCP)
660U 2,4,6-TRICHLOROPHENOL
3200U 2,4,5-TRICHLOROPHENOL
660U 2-CHLORONAPHTHALENE
3200U 2-NITROANILINE
660U DIMETHYL PHTHALATE
660U ACENAPHTHYLENE
660U 2,6-DINITROTOLUENE
  
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UG/KG                      ANALYTICAL RESULTS

```

3200U 3-NITROANILINE
660U ACENAPHTHENE
3200U 2,4-DINITROPHENOL
3200UJ 4-NITROPHENOL
660U DIBENZOFURAN
660U 2,4-DINITROTOLUENE
660U DIETHYL PHTHALATE
660U 4-CHLOROPHENYL PHENYL ETHER
660U FLUORENE
3200U 4-NITROANILINE
3200U 2-METHYL-4,6-DINITROPHENOL
660U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
660U 4-BROMOPHENYL PHENYL ETHER
660U HEXACHLOROENZENE (HCB)
3200U PENTACHLOROPHENOL
660U PHENANTHRENE
660U ANTHRACENE
660U DI-N-BUTYLPHTHALATE
380J FLUORANTHENE
660U PYRENE
660U BENZYL BUTYL PHTHALATE
1300UJ 3,3'-DICHLOROBENZIDINE
660U BENZO(A)ANTHRACENE
190J CHRYSENE
2000U BIS(2-ETHYLHEXYL) PHTHALATE
660U DI-N-OCTYLPHTHALATE
130J BENZO(B AND/OR K)FLUORANTHENE
150J BENZO-A-PYRENE
660U INDENO (1,2,3-CD) PYRENE
660U DIBENZO(A,H)ANTHRACENE
660U BENZO(GH)PERYLENE
50 PERCENT MOISTURE
  
```

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
 \*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

```

** PROJECT NO. 89-537   SAMPLE NO. 39784   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA
** STATION ID: SD-06   COLLECTION START: 09/12/89 1610   STOP: 00/00/00

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** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P245

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UG/KG ANALYTICAL RESULTS

```

690U PHENOL
690U BIS(2-CHLOROETHYL) ETHER
690U 2-CHLOROPHENOL
690U 1,3-DICHLOROBENZENE
690U 1,4-DICHLOROBENZENE
690U BENZYL ALCOHOL
690U 1,2-DICHLOROBENZENE
690U 2-METHYLPHENOL
690U BIS(2-CHLOROISOPROPYL) ETHER
690U (3-AND/OR 4-)METHYLPHENOL
690U N-NITROSODI-N-PROPYLAMINE
690U HEXACHLOROETHANE
690U NITROBENZENE
690U ISOPHORONE
690U 2-NITROPHENOL
690U 2,4-DIMETHYLPHENOL
3300UJ BENZOIC ACID
690U BIS(2-CHLOROETHOXY) METHANE
690U 2,4-DICHLOROPHENOL
690U 1,2,4-TRICHLOROBENZENE
690U NAPHTHALENE
690U 4-CHLOROANILINE
690U HEXACHLOROBUTADIENE
690U 4-CHLORO-3-METHYLPHENOL
690U 2-METHYLNAPHTHALENE
690U HEXACHLOROCYCLOPENTADIENE (HCCP)
690U 2,4,6-TRICHLOROPHENOL
3300U 2,4,5-TRICHLOROPHENOL
690U 2-CHLORONAPHTHALENE
3300U 2-NITROANILINE
690U DIMETHYL PHTHALATE
690U ACENAPHTHYLENE
690U 2,6-DINITROTOLUENE

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UG/KG ANALYTICAL RESULTS

```

3300U 3-NITROANILINE
690U ACENAPHTHENE
3300UJ 2,4-DINITROPHENOL
3300U 4-NITROPHENOL
690U DIBENZOFURAN
690U 2,4-DINITROTOLUENE
690U DICTHYL PHTHALATE
690U 4-CHLOROPHENYL PHENYL ETHER
690U FLUORENE
3300U 4-NITROANILINE
3300U 2-METHYL-4,6-DINITROPHENOL
690U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
690U 4-BROMOPHENYL PHENYL ETHER
690U HEXACHLOROBENZENE (HCB)
3300U PENTACHLOROPHENOL
690U PHENANTHRENE
690U ANTHRACENE
690U DI-N-BUTYLPHTHALATE
690U FLUORANTHENE
690U PYRENE
690U BENZYL BUTYL PHTHALATE
1400U 3,3'-DICHLOROBENZIDINE
690U BENZO(A)ANTHRACENE
74J CHRYSENE
690UJ BIS(2-ETHYLHEXYL) PHTHALATE
690U DI-N-OCTYLPHTHALATE
220J BENZO(B AND/OR K)FLUORANTHENE
87J BENZO-A-PYRENE
690U INDENO (1,2,3-CD) PYRENE
690UJ DIBENZO(A,H)ANTHRACENE
690U BENZO(GHI)PERYLENE
52 PERCENT MOISTURE

```

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

```

*A-AVERAGE VALUE   *NA-NOT ANALYZED   *NAI-INTERFERENCES   *J-ESTIMATED VALUE   *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN   *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39768   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA
** STATION ID: SS-01   COLLECTION START: 09/11/89   1245   STOP: 00/00/00
**
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N367
***

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UG/KG                      ANALYTICAL RESULTS

```

370U PHENOL
370U BIS(2-CHLOROETHYL) ETHER
370U 2-CHLOROPHENOL
370U 1,3-DICHLOROBENZENE
370U 1,4-DICHLOROBENZENE
370U BENZYL ALCOHOL
370U 1,2-DICHLOROBENZENE
370U 2-METHYLPHENOL
370UJ BIS(2-CHLOROISOPROPYL) ETHER
370U (3-AND/OR 4-)METHYLPHENOL
370UJ N-NITROSODI-N-PROPYLAMINE
370U HEXACHLOROETHANE
370U NITROBENZENE
370U ISOPHORONE
370U 2-NITROPHENOL
370U 2,4-DIMETHYLPHENOL
1800UJ BENZOIC ACID
370U BIS(2-CHLOROETHOXY) METHANE
370U 2,4-DICHLOROPHENOL
370U 1,2,4-TRICHLOROBENZENE
370U NAPHTHALENE
370UJ 4-CHLOROANILINE
370U HEXACHLOROBUTADIENE
370U 4-CHLORO-3-METHYLPHENOL
370U 2-METHYLNAPHTHALENE
370UJ HEXACHLOROCYCLOPENTADIENE (HCCP)
370U 2,4,6-TRICHLOROPHENOL
1800U 2,4,5-TRICHLOROPHENOL
370U 2-CHLORONAPHTHALENE
1800U 2-NITROANILINE
370U DIMETHYL PHTHALATE
370U ACENAPHTHYLENE
370U 2,6-DINITROTOLUENE

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UG/KG                      ANALYTICAL RESULTS

```

1800UJ 3-NITROANILINE
370U ACENAPHTHENE
1800U 2,4-DINITROPHENOL
1800UJ 4-NITROPHENOL
370U DIBENZOFURAN
370U 2,4-DINITROTOLUENE
370U DIETHYL PHTHALATE
370U 4-CHLOROPHENYL PHENYL ETHER
370U FLUORENE
1800UJ 4-NITROANILINE
1800U 2-METHYL-4,6-DINITROPHENOL
370U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
370U 4-BROMOPHENYL PHENYL ETHER
370U HEXACHLOROBENZENE (HCB)
1800U PENTACHLOROPHENOL
370U PHENANTHRENE
370U ANTHRACENE
370U DI-N-BUTYLPHTHALATE
370U FLUORANTHENE
370U PYRENE
370U BENZYL BUTYL PHTHALATE
750UJ 3,3'-DICHLOROBENZIDINE
370U BENZO(A)ANTHRACENE
370U CHRYSENE
370U BIS(2-ETHYLHEXYL) PHTHALATE
370U DI-N-OCTYLPHTHALATE
370U BENZO(B AND/OR K)FLUORANTHENE
370U BENZO-A-PYRENE
370U INDENO (1,2,3-CD) PYRENE
370U DIBENZO(A,H)ANTHRACENE
370U BENZO(GH)PERYLENE
12 PERCENT MOISTURE

```

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39770   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA
** STATION ID: SS-02   COLLECTION START: 09/11/89   1410   STOP: 00/00/00
**
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N369
***
  
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UG/KG      ANALYTICAL RESULTS

```

370U PHENOL
370U BIS(2-CHLOROETHYL) ETHER
370U 2-CHLOROPHENOL
370U 1,3-DICHLOROBENZENE
370U 1,4-DICHLOROBENZENE
370U BENZYL ALCOHOL
370U 1,2-DICHLOROBENZENE
370U 2-METHYLPHENOL
370U BIS(2-CHLOROISOPROPYL) ETHER
370U (3-AND/OR 4-)METHYLPHENOL
370U N-NITROSODI-N-PROPYLAMINE
370U HEXACHLOROETHANE
370UJ NITROBENZENE
370U ISOPHORONE
370U 2-NITROPHENOL
370U 2,4-DIMETHYLPHENOL
1800UJ BENZOIC ACID
370U BIS(2-CHLOROETHOXY) METHANE
370U 2,4-DICHLOROPHENOL
370U 1,2,4-TRICHLOROBENZENE
370U NAPHTHALENE
370UJ 4-CHLOROANILINE
370U HEXACHLOROBUTADIENE
370U 4-CHLORO-3-METHYLPHENOL
370U 2-METHYLNAPHTHALENE
370U HEXACHLOROCYCLOPENTADIENE (HCCP)
370U 2,4,6-TRICHLOROPHENOL
1800U 2,4,5-TRICHLOROPHENOL
370U 2-CHLORONAPHTHALENE
1800UJ 2-NITROANILINE
370U DIMETHYL PHTHALATE
370U ACENAPHTHYLENE
370U 2,6-DINITROTOLUENE
  
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UG/KG      ANALYTICAL RESULTS

```

1800UJ 3-NITROANILINE
370U ACENAPHTHENE
1800U 2,4-DINITROPHENOL
1800UJ 4-NITROPHENOL
370U DIBENZOFURAN
370U 2,4-DINITROTOLUENE
370U DIETHYL PHTHALATE
370U 4-CHLOROPHENYL PHENYL ETHER
370U FLUORENE
1800U 4-NITROANILINE
1800U 2-METHYL-4,6-DINITROPHENOL
370U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
370U 4-BROMOPHENYL PHENYL ETHER
370U HEXACHLOROBENZENE (HCB)
1800U PENTACHLOROPHENOL
370U PHENANTHRENE
370U ANTHRACENE
370U DI-N-BUTYLPHTHALATE
180J FLUORANTHENE
170J PYRENE
370U BENZYL BUTYL PHTHALATE
740UJ 3,3'-DICHLOROBENZIDINE
100J BENZO(A)ANTHRACENE
140J CHRYSENE
600U BIS(2-ETHYLHEXYL) PHTHALATE
370U DI-N-OCTYLPHTHALATE
210J BENZO(B AND/OR K)FLUORANTHENE
100J BENZO-A-PYRENE
53J INDENO (1,2,3-CD) PYRENE
370U DIBENZO(A,H)ANTHRACENE
59J BENZO(GHI)PERYLENE
11 PERCENT MOISTURE
  
```

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

\*\*\* \*\* PROJECT NO. 89-537 SAMPLE NO. 39772 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-03 COLLECTION START: 09/11/89 1605 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N371 \*\*  
\*\*\* \*\* \*\* \*\* \*\*

UG/KG ANALYTICAL RESULTS

370U PHENOL  
370U BIS(2-CHLOROETHYL) ETHER  
370U 2-CHLOROPHENOL  
370U 1,3-DICHLOROBENZENE  
370U 1,4-DICHLOROBENZENE  
370U BENZYL ALCOHOL  
370U 1,2-DICHLOROBENZENE  
370U 2-METHYLPHENOL  
370U BIS(2-CHLOROISOPROPYL) ETHER  
370U (3-AND/OR 4-)METHYLPHENOL  
370U N-NITROSODI-N-PROPYLAMINE  
370U HEXACHLOROETHANE  
370U NITROBENZENE  
370U ISOPHORONE  
370U 2-NITROPHENOL  
1800UJ 2,4-DIMETHYLPHENOL  
370U BENZOIC ACID  
370U BIS(2-CHLOROETHOXY) METHANE  
370U 2,4-DICHLOROPHENOL  
370U 1,2,4-TRICHLOROBENZENE  
370U NAPHTHALENE  
370UJ 4-CHLOROANILINE  
370U HEXACHLOROBUTADIENE  
370U 4-CHLORO-3-METHYLPHENOL  
370U 2-METHYLNAPHTHALENE  
370U HEXACHLOROCYCLOPENTADIENE (HCCP)  
370U 2,4,6-TRICHLOROPHENOL  
1800U 2,4,5-TRICHLOROPHENOL  
370U 2-CHLORONAPHTHALENE  
1800U 2-NITROANILINE  
370U DIMETHYL PHTHALATE  
370U ACENAPHTHYLENE  
370U 2,6-DINITROTOLUENE

UG/KG ANALYTICAL RESULTS

1800UJ 3-NITROANILINE  
370U ACENAPHTHENE  
1800U 2,4-DINITROPHENOL  
1800UJ 4-NITROPHENOL  
370U DIBENZOFURAN  
370U 2,4-DINITROTOLUENE  
370U DIETHYL PHTHALATE  
370U 4-CHLOROPHENYL PHENYL ETHER  
370U FLUORENE  
1800U 4-NITROANILINE  
1800U 2-METHYL-4,6-DINITROPHENOL  
370U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE  
370U 4-BROMOPHENYL PHENYL ETHER  
370U HEXACHLOROBENZENE (HCB)  
1800U PENTACHLOROPHENOL  
370U PHENANTHRENE  
370U ANTHRACENE  
370U DI-N-BUTYLPHTHALATE  
110J FLUORANTHENE  
370U PYRENE  
370U BENZYL BUTYL PHTHALATE  
730UJ 3,3'-DICHLOROBENZIDINE  
51J BENZO(A)ANTHRACENE  
59J CHRYSENE  
370U BIS(2-ETHYLHEXYL) PHTHALATE  
370U DI-N-OCTYLPHTHALATE  
370U BENZO(B AND/OR K)FLUORANTHENE  
43J BENZO-A-PYRENE  
370U INDENO (1,2,3-CD) PYRENE  
370UJ DIBENZO(A,H)ANTHRACENE  
370U BENZO(GHI)PERYLENE  
10 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39774 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-04 COLLECTION START: 09/11/89 1715 STOP: 00/00/00 \*\*  
\*\* \*\*

\*\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N373 \*\*\*

UG/KG	ANALYTICAL RESULTS	UG/KG	ANALYTICAL RESULTS
480U	PHENOL	2300UJ	3-NITROANILINE
480U	BIS(2-CHLOROETHYL) ETHER	170J	ACENAPHTHENE
480U	2-CHLOROPHENOL	2300U	2,4-DINITROPHENOL
480U	1,3-DICHLOROBENZENE	2300UJ	4-NITROPHENOL
480U	1,4-DICHLOROBENZENE	84J	DIBENZOFURAN
480U	BENZYL ALCOHOL	480U	2,4-DINITROTOLUENE
480U	1,2-DICHLOROBENZENE	480U	DIETHYL PHTHALATE
480U	2-METHYLPHENOL	480U	4-CHLOROPHENYL PHENYL ETHER
480U	BIS(2-CHLOROISOPROPYL) ETHER	150J	FLUORENE
480U	(3-AND/OR 4-)METHYLPHENOL	2300UJ	4-NITROANILINE
480U	N-NITROSODI-N-PROPYLAMINE	2300UJ	2-METHYL-4,6-DINITROPHENOL
480U	HEXACHLOROETHANE	480U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
480U	NITROBENZENE	480U	4-BROMOPHENYL PHENYL ETHER
480U	ISOPHORONE	480U	HEXACHLOROENZENE (HCB)
480U	2-NITROPHENOL	2300U	PENTACHLOROPHENOL
480U	2,4-DIMETHYLPHENOL	1600	PHENANTHRENE
2300U	BENZOIC ACID	360J	ANTHRACENE
480U	BIS(2-CHLOROETHOXY) METHANE	480U	DI-N-BUTYLPHTHALATE
480U	2,4-DICHLOROPHENOL	1800	FLUORANTHENE
480U	1,2,4-TRICHLOROBENZENE	1300J	PYRENE
100J	NAPHTHALENE	480U	BENZYL BUTYL PHTHALATE
480UJ	4-CHLOROANILINE	960UJ	3,3'-DICHLOROBENZIDINE
480U	HEXACHLOROBUTADIENE	800	BENZO(A)ANTHRACENE
480U	4-CHLORO-3-METHYLPHENOL	750	CHRYSENE
480U	2-METHYLNAPHTHALENE	480U	BIS(2-ETHYLHEXYL) PHTHALATE
480U	HEXACHLOROCYCLOPENTADIENE (HCCP)	480U	DI-N-OCTYLPHTHALATE
480U	2,4,6-TRICHLOROPHENOL	1000J	BENZO(B AND/OR K)FLUORANTHENE
2300U	2,4,5-TRICHLOROPHENOL	630	BENZO-A-PYRENE
480U	2-CHLORONAPHTHALENE	300J	INDENO (1,2,3-CD) PYRENE
2300UJ	2-NITROANILINE	480U	DIBENZO(A,H)ANTHRACENE
480U	DIMETHYL PHTHALATE	320J	BENZO(GHI)PERYLENE
480U	ACENAPHTHYLENE	31	PERCENT MOISTURE
480U	2,6-DINITROTOLUENE		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39776 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-05 COLLECTION START: 09/12/89 0845 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P237 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

22000U PHENOL  
22000UJ BIS(2-CHLOROETHYL) ETHER  
22000U 2-CHLOROPHENOL  
22000U 1,3-DICHLOROBENZENE  
22000U 1,4-DICHLOROBENZENE  
22000U BENZYL ALCOHOL  
22000U 1,2-DICHLOROBENZENE  
22000UJ 2-METHYLPHENOL  
22000UJ BIS(2-CHLOROISOPROPYL) ETHER  
22000UJ (3-AND/OR 4-)METHYLPHENOL  
22000UJ N-NITROSODI-N-PROPYLAMINE  
22000UJ HEXACHLOROETHANE  
22000U NITROBENZENE  
22000U ISOPHORONE  
22000U 2-NITROPHENOL  
22000U 2,4-DIMETHYLPHENOL  
110000U BENZOIC ACID  
22000U BIS(2-CHLOROETHOXY) METHANE  
22000U 2,4-DICHLOROPHENOL  
22000U 1,2,4-TRICHLOROBENZENE  
22000U NAPHTHALENE  
22000U 4-CHLOROANILINE  
22000U HEXACHLOROBUTADIENE  
22000U 4-CHLORO-3-METHYLPHENOL  
21000J 2-METHYLNAPHTHALENE  
22000U HEXACHLOROCYCLOPENTADIENE (HCCP)  
22000U 2,4,6-TRICHLOROPHENOL  
110000U 2,4,5-TRICHLOROPHENOL  
22000U 2-CHLORONAPHTHALENE  
110000U 2-NITROANILINE  
22000U DIMETHYL PHTHALATE  
22000U ACENAPHTHYLENE  
22000U 2,6-DINITROTOLUENE

UG/KG ANALYTICAL RESULTS

110000UJ 3-NITROANILINE  
22000U ACENAPHTHENE  
110000U 2,4-DINITROPHENOL  
110000UJ 4-NITROPHENOL  
22000U DIBENZOFURAN  
25000U 2,4-DINITROTOLUENE  
22000U DIETHYL PHTHALATE  
22000U 4-CHLOROPHENYL PHENYL ETHER  
19000J FLUORENE  
110000UJ 4-NITROANILINE  
110000U 2-METHYL-4,6-DINITROPHENOL  
22000U N-NITROSODIPHENYLAMINE/DIPHENYLAMINE  
22000U 4-BROMOPHENYL PHENYL ETHER  
22000UJ HEXACHLOROBENZENE (HCB)  
110000U PENTACHLOROPHENOL  
38000 PHENANTHRENE  
22000U ANTHRACENE  
22000U DI-N-BUTYLPHTHALATE  
22000U FLUORANTHENE  
22000U PYRENE  
22000U BENZYL BUTYL PHTHALATE  
44000U 3,3'-DICHLOROBENZIDINE  
22000U BENZO(A)ANTHRACENE  
22000U CHRYSENE  
22000U BIS(2-ETHYLHEXYL) PHTHALATE  
22000U DI-N-OCTYLPHTHALATE  
22000U BENZO(B AND/OR K)FLUORANTHENE  
22000U BENZO-A-PYRENE  
22000UJ INDENO (1,2,3-CD) PYRENE  
22000U DIBENZO(A,H)ANTHRACENE  
22000U BENZO(GHI)PERYLENE  
10 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

EXTRACTABLE ORGANICS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39777 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-06 COLLECTION START: 09/12/89 0950 STOP: 00/00/00 \*\*

\*\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P238 \*\*\*

UG/KG	ANALYTICAL RESULTS	UG/KG	ANALYTICAL RESULTS
350U	PHENOL	1700UJ	3-NITROANILINE
350U	BIS(2-CHLOROETHYL) ETHER	350U	ACENAPHTHENE
350U	2-CHLOROPHENOL	1700U	2,4-DINITROPHENOL
350U	1,3-DICHLOROBENZENE	1700UJ	4-NITROPHENOL
350U	1,4-DICHLOROBENZENE	350U	DIBENZOFURAN
350U	BENZYL ALCOHOL	350U	2,4-DINITROTOLUENE
350U	1,2-DICHLOROBENZENE	350U	DIETHYL PHTHALATE
350U	2-METHYLPHENOL	350U	4-CHLOROPHENYL PHENYL ETHER
350U	BIS(2-CHLOROISOPROPYL) ETHER	350U	FLUORENE
350U	(3-AND/OR 4-)METHYLPHENOL	1700U	4-NITROANILINE
350U	N-NITROSODI-N-PROPYLAMINE	1700U	2-METHYL-4,6-DINITROPHENOL
350U	HEXACHLOROETHANE	350U	N-NITROSODIPHENYLAMINE/DIPHENYLAMINE
350UJ	NITROBENZENE	350U	4-BROMOPHENYL PHENYL ETHER
350U	ISOPHORONE	350U	HEXACHLOROENZENE (HCB)
350U	2-NITROPHENOL	1700U	PENTACHLOROPHENOL
350U	2,4-DIMETHYLPHENOL	350U	PHENANTHRENE
1700UJ	BENZOIC ACID	39J	ANTHRACENE
350U	BIS(2-CHLOROETHOXY) METHANE	350U	DI-N-BUTYLPHTHALATE
350U	2,4-DICHLOROPHENOL	340J	FLUORANTHENE
350U	1,2,4-TRICHLOROBENZENE	250J	PYRENE
350U	NAPHTHALENE	350U	BENZYL BUTYL PHTHALATE
350UJ	4-CHLOROANILINE	700UJ	3,3'-DICHLOROBENZIDINE
350U	HEXACHLOROBUTADIENE	130J	BENZO(A)ANTHRACENE
350U	4-CHLORO-3-METHYLPHENOL	170J	CHRYSENE
350U	2-METHYLNAPHTHALENE	400U	BIS(2-ETHYLHEXYL) PHTHALATE
350U	HEXACHLOROCYCLOPENTADIENE (HCCP)	350U	DI-N-OCTYLPHTHALATE
350U	2,4,6-TRICHLOROPHENOL	130J	BENZO(B AND/OR K)FLUORANTHENE
1700U	2,4,5-TRICHLOROPHENOL	140J	BENZO-A-PYRENE
350U	2-CHLORONAPHTHALENE	78J	INDENO (1,2,3-CD) PYRENE
1700UJ	2-NITROANILINE	350U	DIBENZO(A,H)ANTHRACENE
350U	DIMETHYL PHTHALATE	84J	BENZO(GH)PERYLENE
350U	ACENAPHTHYLENE	6	PERCENT MOISTURE
350U	2,6-DINITROTOLUENE		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

\*\*\* \*\* \*\* \*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39771 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-02 COLLECTION START: 09/11/89 1445 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N370 MD NO: N370 \*\*  
\*\* \*\* \*\* \*\*

ANALYTICAL RESULTS UG/KG

500JN OXYBISETHANOL DIACETATE  
4000JN ETHANEDIOL MONOACETATE  
5000J 2 UNIDENTIFIED COMPOUNDS

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

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*****
** PROJECT NO. 89-537   SAMPLE NO. 30773   SAMPLE TYPE. SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SB-03   COLLECTION START: 09/11/89   1615   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N372   MD NO: N372   **
**
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ANALYTICAL RESULTS UG/KG

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30000J  15 UNIDENTIFIED COMPOUNDS
10000JN DIMETHYLNAPHTHALENE
30000JN TRIMETHYLNAPHTHALENE
20000JN CHLOROTRIS(METHYLPROPYL)STANNANE
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\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 30775 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-04 COLLECTION START: 09/11/89 1735 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P236 MD NO: Q236 \*\*  
\*\*

ANALYTICAL RESULTS UG/KG

800J 2 UNIDENTIFIED COMPOUNDS

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 30778   SAMPLE TYPE. SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SB-05   COLLECTION START: 09/12/89   1005   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P239   MD NO: Q239   **
** ** ** **
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ANALYTICAL RESULTS UG/KG

1000J 2 UNIDENTIFIED COMPOUNDS

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

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*** *****  
** PROJECT NO. 89-537   SAMPLE NO. 39779   SAMPLE TYPE. SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **  
** SOURCE. LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **  
** STATION ID: SD-01   COLLECTION START: 09/12/89   1300   STOP: 00/00/00   **  
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P240   MD NO: Q240   **  
** *****
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ANALYTICAL RESULTS UG/KG

3000J 2 UNIDENTIFIED COMPOUNDS

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 30781   SAMPLE TYPE. SOIL   PROG ELEM. NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SD-03   COLLECTION START: 09/12/89   1440   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P242   MD NO: Q242   **
** ** ** **
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ANALYTICAL RESULTS UG/KG

3000JN ETHANEDIOL MONOACETATE

\*\*\*FOOTNOTES\*\*\*

- \*A-AVERAGE VALUE
- \*NA-NOT ANALYZED
- \*NAI-INTERFERENCES
- \*J-ESTIMATED VALUE
- \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
- \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN
- \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
- \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.
- \*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

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*** ** ** ** **
** PROJECT NO. 89-537   SAMPLE NO. 39783   SAMPLE TYPE. SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SD-05   COLLECTION START: 09/12/89 1550   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P244   MD NO: Q244   **
** ** ** **
```

ANALYTICAL RESULTS UG/KG

1000JN CHLOROTRIS(METHYLPROPYL)STANNANE  
700J 1 UNIDENTIFIED COMPOUND

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

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*****  
** PROJECT NO. 89-537   SAMPLE NO. 89784   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **  
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **  
** STATION ID: SD-06   COLLECTION START: 09/12/89   1610   STOP: 00/00/00   **  
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: P245   MU NO: Q245   **  
*****
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ANALYTICAL RESULTS UG/KG

2000J 2 UNIDENTIFIED COMPOUNDS

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

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*** *****  
** PROJECT NO. 89-537   SAMPLE NO. 30768   SAMPLE TYPE. SOIL   PROG ELEM. NSF   COLLECTED BY: G CARTON   **  
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **  
** STATION ID: SS-01   COLLECTION START: 09/11/89 1245   STOP: 00/00/00   **  
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: N367   MD NO: N367   **  
** *****
```

ANALYTICAL RESULTS UG/KG

200JN BENZENEACETIC ACID  
5000J 5 UNIDENTIFIED COMPOUNDS

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 29770 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-02 COLLECTION START: 09/11/89 1410 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: N369 MD NO: N369 \*\*  
\*\*  
\*\*\*

ANALYTICAL RESULTS UG/KG

2000J 4 UNIDENTIFIED COMPOUNDS  
800JN CHLOROTRIS(METHYLPROPYL)STANWANE  
200JN ETHYLIOFNEBIS(EIHYLBENZENE)  
300JN BENZOPYRENE (NOT A)

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

\*\*\*\*\*  
\*\* PROJECT NO. 89-537    SAMPLE NO. 30774    SAMPLE TYPE. SOIL    PROG FILE: NSF    COLLECTED BY: G CARTON    \*\*  
\*\* SOURCE: LATEX CONSTRUCTION    CITY: SAVANNAH    ST: GA    \*\*  
\*\* STATION ID: SS-04    COLLECTION START: 09/11/89    1715    STOP: 00/00/00    \*\*  
\*\* CASE NO.: 12698    SAS NO.: 4921D    D. NO.: N373    MD NO: N373    \*\*  
\*\*\*\*\*

ANALYTICAL RESULTS UG/KG

4000JN    ETHANEDIOL MONOACETATE  
300JN    TRIBROMOPHENOL  
200JN    CYCLOPENTAPHENANTHRENE  
300JN    BENZOFLUORENE (2 ISOMERS)  
400JN    BENZOFLUORANTHENE (NOT B OR K)  
600J    1 UNIDENTIFIED COMPOUND

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39776 SAMPLE TYPE. SOIL PROG FILE: NSF COLLECTED BY: G CARTON  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA  
\*\* STATION ID: SS-05 COLLECTION START: 09/12/89 0845 STOP: 00/00/00  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P237 MD NO: Q237  
\*\*  
\*\*\*

ANALYTICAL RESULTS UG/KG

5000000J 17 UNIDENTIFIED COMPOUND  
N PETROLEUM PRODUCT  
1000000JN DIMETHYLNAPHTHALENE  
2000000JN TRIMETHYLNAPHTHALENE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

MISCELLANEOUS EXTRACTABLE COMPOUNDS - DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39777 SAMPLE TYPE: SOIL PROG. ELEM: NSF COLLECTED BY: G. CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-06 COLLECTION START: 09/12/89 0950 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: P238 MD NO.: Q238 \*\*  
\*\*  
\*\*\*

ANALYTICAL RESULTS UG/KG

300JN CHLROTRIS(METHYLPROPYL)SIANNANE  
400JN BENZOPYRENE (NOT A)  
5000J 8 UNIDENTIFIED COMPOUNDS

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39771 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G. CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-02 COLLECTION START: 09/11/89 1445 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: N370 \*\*  
\*\*

UG/KG ANALYTICAL RESULTS

30U ALPHA-BHC  
30U BETA-BHC  
30U DELTA-BHC  
30U GAMMA-BHC (LINDANE)  
30U HEPTACHLOR  
30U ALDRIN  
30U HEPTACHLOR EPOXIDE  
30U ENDOSULFAN I (ALPHA)  
59U DIELDRIN  
59U 4,4'-DDE (P,P'-DDE)  
59U ENDRIN  
59U ENDOSULFAN II (BETA)  
59U 4,4'-DDD (P,P'-DDD)  
59U ENDOSULFAN SULFATE  
59U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

300U METHOXYCHLOR  
59U ENDRIN KETONE  
-- CHLORDANE (TECH. MIXTURE) /1  
300U GAMMA-CHLORDANE /2  
300U ALPHA-CHLORDANE /2  
590U TOXAPHENE  
300U PCB-1016 (AROCLOR 1016)  
300U PCB-1221 (AROCLOR 1221)  
300U PCB-1232 (AROCLOR 1232)  
300U PCB-1242 (AROCLOR 1242)  
300U PCB-1248 (AROCLOR 1248)  
590U PCB-1254 (AROCLOR 1254)  
590U PCB-1260 (AROCLOR 1260)  
46 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39773 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-03 COLLECTION START: 09/11/89 1615 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12598 SAS NUMBER: 4921D D. NUMBER: N372 \*\*  
\*\*

UG/KG

ANALYTICAL RESULTS

14U ALPHA-BHC  
14U BETA-BHC  
14U DELTA-BHC  
14U GAMMA-BHC (LINDANE)  
14U HEPTACHLOR  
14U ALDRIN  
14U HEPTACHLOR EPOXIDE  
14U ENDOSULFAN I (ALPHA)  
29U DIELDRIN  
29U 4,4'-DDE (P,P'-DDE)  
29U ENDRIN  
29U ENDOSULFAN II (BETA)  
29U 4,4'-DDD (P,P'-DDD)  
29U ENDOSULFAN SULFATE  
29U 4,4'-DDT (P,P'-DDT)

UG/KG

ANALYTICAL RESULTS

140U METHOXYCHLOR  
29U ENDRIN KETONE  
--- CHLORDANE (TECH. MIXTURE) /1  
140U GAMMA-CHLORDANE /2  
140U ALPHA-CHLORDANE /2  
290U TOXAPHENE  
140U PCB-1016 (AROCLOR 1016)  
140U PCB-1221 (AROCLOR 1221)  
140U PCB-1232 (AROCLOR 1232)  
140U PCB-1242 (AROCLOR 1242)  
280 PCB-1248 (AROCLOR 1248)  
290U PCB-1254 (AROCLOR 1254)  
290U PCB-1260 (AROCLOR 1260)  
45 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39775 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: 5B-04 COLLECTION START: 09/11/89 1735 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P236 \*\*  
\*\*

UG/KG

ANALYTICAL RESULTS

20U ALPHA-BHC  
20U BETA-BHC  
20U DELTA-BHC  
20U GAMMA-BHC (LINDANE)  
20U HEPTACHLOR  
20U ALDRIN  
20U HEPTACHLOR EPOXIDE  
20U ENDOSULFAN I (ALPHA)  
39U DIELDRIN  
39U 4,4'-DDE (P,P'-DDE)  
39U ENDRIN  
39U ENDOSULFAN II (BETA)  
39U 4,4'-DDD (P,P'-DDD)  
39U ENDOSULFAN SULFATE  
39U 4,4'-DDT (P,P'-DDT)

UG/KG

ANALYTICAL RESULTS

200U METHOXYCHLOR  
39U ENDRIN KETONE  
--- CHLORDANE (TECH. MIXTURE) /1  
200U GAMMA-CHLORDANE /2  
200U ALPHA-CHLORDANE /2  
390U TOXAPHENE  
200U PCB-1016 (AROCLOR 1016)  
200U PCB-1221 (AROCLOR 1221)  
200U PCB-1232 (AROCLOR 1232)  
200U PCB-1242 (AROCLOR 1242)  
200U PCB-1248 (AROCLOR 1248)  
390U PCB-1254 (AROCLOR 1254)  
390U PCB-1260 (AROCLOR 1260)  
18 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.  
\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39778 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SB-05 COLLECTION START: 09/12/89 1005 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P239 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

10U ALPHA-BHC  
10U BETA-BHC  
10U DELTA-BHC  
10U GAMMA-BHC (LINDANE)  
10U HEPTACHLOR  
10U ALDRIN  
10U HEPTACHLOR EPOXIDE  
10U ENDOSULFAN I (ALPHA)  
20U DIELDRIN  
20U 4,4'-DDE (P,P'-DDE)  
20U ENDRIN  
20U ENDOSULFAN II (BETA)  
20U 4,4'-DDD (P,P'-DDD)  
20U ENDOSULFAN SULFATE  
20U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

100U METHOXYCHLOR  
20U ENDRIN KETONE  
-- CHLORDANE (TECH. MIXTURE) /1  
100U GAMMA-CHLORDANE /2  
100U ALPHA-CHLORDANE /2  
200U TOXAPHENE  
100U PCB-1016 (AROCLOR 1016)  
100U PCB-1221 (AROCLOR 1221)  
100U PCB-1232 (AROCLOR 1232)  
100U PCB-1242 (AROCLOR 1242)  
100U PCB-1248 (AROCLOR 1248)  
200U PCB-1254 (AROCLOR 1254)  
200U PCB-1260 (AROCLOR 1260)  
21 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.  
\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39779 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-01 COLLECTION START: 09/12/89 1300 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P240 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

13U ALPHA-BHC  
13U BETA-BHC  
13U DELTA-BHC  
13U GAMMA-BHC (LINDANE)  
13U HEPTACHLOR  
13U ALDRIN  
13U HEPTACHLOR EPOXIDE  
13U ENDOSULFAN I (ALPHA)  
27U DIELDRIN  
27U 4,4'-DDE (P,P'-DDE)  
27U ENDRIN  
27U ENDOSULFAN II (BETA)  
27U 4,4'-DDD (P,P'-DDD)  
27U ENDOSULFAN SULFATE  
27U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

130U METHOXYCHLOR  
27U ENDRIN KETONE  
--- CHLORDANE (TECH. MIXTURE) /1  
130U GAMMA-CHLORDANE /2  
130U ALPHA-CHLORDANE /2  
270U TOXAPHENE  
130U PCB-1016 (AROCOR 1016)  
130U PCB-1221 (AROCOR 1221)  
130U PCB-1232 (AROCOR 1232)  
130U PCB-1242 (AROCOR 1242)  
130U PCB-1248 (AROCOR 1248)  
270U PCB-1254 (AROCOR 1254)  
270U PCB-1260 (AROCOR 1260)  
40 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.  
\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39780 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-02 COLLECTION START: 09/12/89 1335 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 49210 D. NUMBER: P241 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

30U ALPHA-BHC  
30U BETA-BHC  
30U DELTA-BHC  
30U GAMMA-BHC (LINDANE)  
30U HEPTACHLOR  
30U ALDRIN  
30U HEPTACHLOR EPOXIDE  
30U ENDOSULFAN I (ALPHA)  
59U DIELDRIN  
59U 4,4'-DDE (P,P'-DDE)  
59U ENDRIN  
59U ENDOSULFAN II (BETA)  
59U 4,4'-DDD (P,P'-DDD)  
59U ENDOSULFAN SULFATE  
59U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

300U METHOXYCHLOR  
59U ENDRIN KETONE  
-- CHLORDANE (TECH. MIXTURE) /1  
300U GAMMA-CHLORDANE /2  
300U ALPHA-CHLORDANE /2  
590U TOXAPHENE  
300U PCB-1016 (AROCLOR 1016)  
300U PCB-1221 (AROCLOR 1221)  
300U PCB-1232 (AROCLOR 1232)  
300U PCB-1242 (AROCLOR 1242)  
300U PCB-1248 (AROCLOR 1248)  
590U PCB-1254 (AROCLOR 1254)  
590U PCB-1260 (AROCLOR 1260)  
73 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.  
\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

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\*\* PROJECT NO. 89-537 SAMPLE NO. 39781 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-03 COLLECTION START: 09/12/89 1440 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P242 \*\*  
\*\*

UG/KG ANALYTICAL RESULTS

15U ALPHA-BHC  
15U BETA-BHC  
15U DELTA-BHC  
15U GAMMA-BHC (LINDANE)  
15U HEPTACHLOR  
15U ALDRIN  
15U HEPTACHLOR EPOXIDE  
15U ENDOSULFAN I (ALPHA)  
31U DIELDRIN  
31U 4,4'-DDE (P,P'-DDE)  
31U ENDRIN  
31U ENDOSULFAN II (BETA)  
31U 4,4'-DDD (P,P'-DDD)  
31U ENDOSULFAN SULFATE  
31U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

150U METHOXYCHLOR  
31U ENDRIN KETONE  
--- CHLORDANE (TECH. MIXTURE) /1  
150U GAMMA-CHLORDANE /2  
150U ALPHA-CHLORDANE /2  
310U TOXAPHENE  
150U PCB-1016 (AROCLOR 1016)  
150U PCB-1221 (AROCLOR 1221)  
150U PCB-1232 (AROCLOR 1232)  
150U PCB-1242 (AROCLOR 1242)  
150U PCB-1248 (AROCLOR 1248)  
310U PCB-1254 (AROCLOR 1254)  
310U PCB-1260 (AROCLOR 1260)  
48 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39782 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-04 COLLECTION START: 09/12/89 1510 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P243 \*\*  
\*\*\* \*\*

UG/KG ANALYTICAL RESULTS

13U ALPHA-BHC  
13U BETA-BHC  
13U DELTA-BHC  
13U GAMMA-BHC (LINDANE)  
13U HEPTACHLOR  
13U ALDRIN  
13U HEPTACHLOR EPOXIDE  
13U ENDOSULFAN I (ALPHA)  
25U DIELDRIN  
25U 4,4'-DDE (P,P'-DDE)  
25U ENDRIN  
25U ENDOSULFAN II (BETA)  
25U 4,4'-DDD (P,P'-DDD)  
25U ENDOSULFAN SULFATE  
25U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

130U METHOXYCHLOR  
25U ENDRIN KETONE  
--- CHLORDANE (TECH. MIXTURE) /1  
130U GAMMA-CHLORDANE /2  
130U ALPHA-CHLORDANE /2  
250U TOXAPHENE  
130U PCB-1016 (AROCLOR 1016)  
130U PCB-1221 (AROCLOR 1221)  
130U PCB-1232 (AROCLOR 1232)  
130U PCB-1242 (AROCLOR 1242)  
130U PCB-1248 (AROCLOR 1248)  
250U PCB-1254 (AROCLOR 1254)  
250U PCB-1260 (AROCLOR 1260)  
37 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39783 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LAIEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-05 COLLECTION START: 09/12/89 1550 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P244 \*\*  
\*\*\*

UG/KG ANALYTICAL RESULTS

16U ALPHA-BHC  
16U BETA-BHC  
16U DELTA-BHC  
16U GAMMA-BHC (I.INDANE)  
16U HEPTACHLOR  
16U ALDRIN  
16U HEPTACHLOR EPOXIDE  
16U ENDOSULFAN I (ALPHA)  
32U DIELDRIN  
32U 4,4'-DDE (P,P'-DDE)  
32U ENDRIN  
32U ENDOSULFAN II (BETA)  
32U 4,4'-DDD (P,P'-DDD)  
32U ENDOSULFAN SULFATE  
32U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

160U METHOXYCHLOR  
32U ENDRIN KETONE  
-- CHLORDANE (TECH. MIXTURE) /1  
160U GAMMA-CHLORDANE /2  
160U ALPHA-CHLORDANE /2  
320U TOXAPHENE  
160U PCB-1016 (AROCLOR 1016)  
160U PCB-1221 (AROCLOR 1221)  
160U PCB-1232 (AROCLOR 1232)  
160U PCB-1242 (AROCLOR 1242)  
160U PCB-1248 (AROCLOR 1248)  
320U PCB-1254 (AROCLOR 1254)  
320U PCB-1260 (AROCLOR 1260)  
50 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39784 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SD-06 COLLECTION START: 09/12/89 1610 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P245 \*\*  
\*\*

UG/KG ANALYTICAL RESULTS

17U ALPHA-BHC  
17U BETA-BHC  
17U DELTA-BHC  
17U GAMMA-BHC (LINDANE)  
17U HEPTACHLOR  
17U ALDRIN  
17U HEPTACHLOR EPOXIDE  
17U ENDOSULFAN I (ALPHA)  
33U DIELDRIN  
33U 4,4'-DDE (P,P'-DDE)  
33U ENDRIN  
33U ENDOSULFAN II (BETA)  
33U 4,4'-DDD (P,P'-DDD)  
33U ENDOSULFAN SULFATE  
33U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

170U METHOXYCHLOR  
33U ENDRIN KETONE  
--- CHLORDANE (TECH. MIXTURE) /1  
170U GAMMA-CHLORDANE /2  
170U ALPHA-CHLORDANE /2  
330U TOXAPHENE  
170U PCB-1016 (AROCLOR 1016)  
170U PCB-1221 (AROCLOR 1221)  
170U PCB-1232 (AROCLOR 1232)  
170U PCB-1242 (AROCLOR 1242)  
170U PCB-1248 (AROCLOR 1248)  
330U PCB-1254 (AROCLOR 1254)  
330U PCB-1260 (AROCLOR 1260)  
52 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
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\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

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*** **
** PROJECT NO. 89-537   SAMPLE NO. 39768   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: S5-01   COLLECTION START: 09/11/89   1245   STOP: 00/00/00   **
** CASE NUMBER: 12698   SAS NUMBER: 4921D   D. NUMBER: N367   **
** **

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UG/KG	ANALYTICAL RESULTS	UG/KG	ANALYTICAL RESULTS
9.1U	ALPHA-BHC	91U	METHOXYCHLOR
9.1U	BETA-BHC	18U	ENDRIN KETONE
9.1U	DELTA-BHC	--	CHLORDANE (TECH. MIXTURE) /1
9.1U	GAMMA-BHC (LINDANE)	91U	GAMMA-CHLORDANE /2
9.1U	HEPTACHLOR	91U	ALPHA-CHLORDANE /2
9.1U	ALDRIN	180U	TOXAPHENE
9.1U	HEPTACHLOR EPOXIDE	91U	PCB-1016 (AROCLOR 1016)
9.1U	ENDOSULFAN I (ALPHA)	91U	PCB-1221 (AROCLOR 1221)
18U	DIELDRIN	91U	PCB-1232 (AROCLOR 1232)
37	4,4'-DDE (P,P'-DDE)	91U	PCB-1242 (AROCLOR 1242)
18U	ENDRIN	91U	PCB-1248 (AROCLOR 1248)
18U	ENDOSULFAN II (BETA)	180U	PCB-1254 (AROCLOR 1254)
18U	4,4'-DDD (P,P'-DDD)	180U	PCB-1260 (AROCLOR 1260)
18U	ENDOSULFAN SULFATE	12	PERCENT MOISTURE
18U	4,4'-DDT (P,P'-DDT)		

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
 \*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.  
 \*C-CONFIRMED BY GCMS    1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39770 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-02 COLLECTION START: 09/11/89 1410 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 49210 D. NUMBER: N369 \*\*  
\*\*

UG/KG ANALYTICAL RESULTS

18U ALPHA-BHC  
18U BETA-BHC  
18U DELTA-BHC  
18U GAMMA-BHC (LINDANE)  
18U HEPTACHLOR  
18U ALDRIN  
18U HEPTACHLOR EPOXIDE  
18U ENDOSULFAN I (ALPHA)  
36U DIELDRIN  
36U 4,4'-DDE (P,P'-DDE)  
36U ENDRIN  
36U ENDOSULFAN II (BETA)  
36U 4,4'-DDD (P,P'-DDD)  
36U ENDOSULFAN SULFATE  
36U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

180U METHOXYCHLOR  
36U ENDRIN KETONE  
-- CHLORDANE (TECH. MIXTURE) /1  
180U GAMMA-CHLORDANE /2  
180U ALPHA-CHLORDANE /2  
360U TOXAPHENE  
180U PCB-1016 (AROCLOR 1016)  
180U PCB-1221 (AROCLOR 1221)  
180U PCB-1232 (AROCLOR 1232)  
180U PCB-1242 (AROCLOR 1242)  
180U PCB-1248 (AROCLOR 1248)  
360U PCB-1254 (AROCLOR 1254)  
360U PCB-1260 (AROCLOR 1260)  
11 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 39772   SAMPLE TYPE: SOIL   PROG ELEM: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: SS-03   COLLECTION START: 09/11/89   1605   STOP: 00/00/00   **
** CASE NUMBER: 12698   SAS NUMBER: 4921D   D. NUMBER: N371   **
**

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UG/KG                      ANALYTICAL RESULTS

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8.9U ALPHA-BHC
8.9U BETA-BHC
8.9U DELTA-BHC
8.9U GAMMA-BHC (LINDANE)
8.9U HEPTACHLOR
8.9U ALDRIN
8.9U HEPTACHLOR EPOXIDE
8.9U ENDOSULFAN I (ALPHA)
18U DIELDRIN
18U 4,4'-DDE (P,P'-DDE)
18U ENDRIN
18U ENDOSULFAN II (BETA)
18U 4,4'-DDD (P,P'-DDD)
18U ENDOSULFAN SULFATE
18U 4,4'-DDT (P,P'-DDT)

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UG/KG                      ANALYTICAL RESULTS

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89U METHOXYCHLOR
18U ENDRIN KETONE
-- CHLORDANE (TECH. MIXTURE) /1
89U GAMMA-CHLORDANE /2
89U ALPHA-CHLORDANE /2
180U TOXAPHENE
89U PCB-1016 (AROCLOR 1016)
89U PCB-1221 (AROCLOR 1221)
89U PCB-1232 (AROCLOR 1232)
89U PCB-1242 (AROCLOR 1242)
89U PCB-1248 (AROCLOR 1248)
180U PCB-1254 (AROCLOR 1254)
180U PCB-1260 (AROCLOR 1260)
10 PERCENT MOISTURE

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\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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*A-AVERAGE VALUE    *NA-NOT ANALYZED    *NAI-INTERFERENCES    *J-ESTIMATED VALUE    *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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*C-CONFIRMED BY GCMS                      1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39774 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-04 COLLECTION START: 09/11/89 1715 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 49210 D. NUMBER: N373 \*\*  
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UG/KG ANALYTICAL RESULTS

12U ALPHA-BHC  
12U BETA-BHC  
12U DELTA-BHC  
12U GAMMA-BHC (LINDANE)  
12U HEPTACHLOR  
12U ALDRIN  
12U HEPTACHLOR EPOXIDE  
12U ENDOSULFAN I (ALPHA)  
23U DIELDRIN  
23U 4,4'-DDE (P,P'-DDE)  
23U ENDRIN  
23U ENDOSULFAN II (BETA)  
23U 4,4'-DDD (P,P'-DDD)  
23U ENDOSULFAN SULFATE  
23U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

120U METHOXYCHLOR  
23U ENDRIN KETONE  
--- CHLORDANE (TECH. MIXTURE) /1  
120U GAMMA-CHLORDANE /2  
120U ALPHA-CHLORDANE /2  
230U TOXAPHENE  
120U PCB-1016 (AROCLOR 1016)  
120U PCB-1221 (AROCLOR 1221)  
120U PCB-1232 (AROCLOR 1232)  
120U PCB-1242 (AROCLOR 1242)  
120U PCB-1248 (AROCLOR 1248)  
230U PCB-1254 (AROCLOR 1254)  
230U PCB-1260 (AROCLOR 1260)  
31 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

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\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39776 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-05 COLLECTION START: 09/12/89 0645 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P237 \*\*  
\*\*

UG/KG ANALYTICAL RESULTS

89U ALPHA-BHC  
89U BETA-BHC  
89U DELTA-BHC  
89U GAMMA-BHC (LINDANE)  
89U HEPTACHLOR  
89U ALDRIN  
89U HEPTACHLOR EPOXIDE  
89U ENDOSULFAN I (ALPHA)  
180U DIELDRIN  
180U 4,4'-DDE (P,P'-DDE)  
180U ENDRIN  
180U ENDOSULFAN II (BETA)  
180U 4,4'-DDD (P,P'-DDD)  
180U ENDOSULFAN SULFATE  
180U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

890U METHOXYCHLOR  
180U ENDRIN KETONE  
-- CHLORDANE (TECH. MIXTURE) /1  
930 GAMMA-CHLORDANE /2  
890U ALPHA-CHLORDANE /2  
1800U TOXAPHENE  
890U PCB-1016 (AROCLOR 1016)  
890U PCB-1221 (AROCLOR 1221)  
890U PCB-1232 (AROCLOR 1232)  
890U PCB-1242 (AROCLOR 1242)  
890U PCB-1248 (AROCLOR 1248)  
1800U PCB-1254 (AROCLOR 1254)  
1800U PCB-1260 (AROCLOR 1260)  
10 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
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\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
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\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

10/12/89

PESTICIDES/PCB'S DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39777 SAMPLE TYPE: SOIL PROG ELEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: SS-06 COLLECTION START: 09/12/89 0950 STOP: 00/00/00 \*\*  
\*\* CASE NUMBER: 12698 SAS NUMBER: 4921D D. NUMBER: P238 \*\*  
\*\*\* \*\*

UG/KG ANALYTICAL RESULTS

8.5U ALPHA-BHC  
8.5U BETA-BHC  
8.5U DELTA-BHC  
8.5U GAMMA-BHC (LINDANE)  
8.5U HEPTACHLOR  
8.5U ALDRIN  
8.5U HEPTACHLOR EPOXIDE  
8.5U ENDOSULFAN I (ALPHA)  
17U DIELDRIN  
17U 4,4'-DDE (P,P'-DDE)  
17U ENDRIN  
17U ENDOSULFAN II (BETA)  
17U 4,4'-DDD (P,P'-DDD)  
17U ENDOSULFAN SULFATE  
17U 4,4'-DDT (P,P'-DDT)

UG/KG ANALYTICAL RESULTS

85U METHOXYCHLOR  
17U ENDRIN KETONE  
-- CHLORDANE (TECH. MIXTURE) /1  
85U GAMMA-CHLORDANE /2  
85U ALPHA-CHLORDANE /2  
170U TOXAPHENE  
85U PCB-1016 (AROCLOR 1016)  
85U PCB-1221 (AROCLOR 1221)  
85U PCB-1232 (AROCLOR 1232)  
85U PCB-1242 (AROCLOR 1242)  
85U PCB-1248 (AROCLOR 1248)  
170U PCB-1254 (AROCLOR 1254)  
170U PCB-1260 (AROCLOR 1260)  
6 PERCENT MOISTURE

\*\*\*REMARKS\*\*\*

\*\*\*REMARKS\*\*\*

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.  
\*R-QC INDICATES THAT DATA UNUSABLE. COMPOUND MAY OR MAY NOT BE PRESENT. RESAMPLING AND REANALYSIS IS NECESSARY FOR VERIFICATION.  
\*C-CONFIRMED BY GCMS 1. WHEN NO VALUE IS REPORTED, SEE CHLORDANE CONSTITUENTS.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSTS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39790 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SB-02 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SB02 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
30UJ UG/KG MONOBUTYL TIN  
30UJ UG/KG DIBUTYL TIN  
35N UG/KG TRIBUTYL TIN  
30UR UG/KG MONOPHENYL TIN  
30UJ UG/KG DIPHENYL TIN  
30U UG/KG TRIPHENYL TIN  
60J MG/KG TIN  
35 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAJ-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39790 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SB-02 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 49210 D. NO.: SBO2 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS	UNITS	PARAMETER
30UJ	UG/KG	MONOBUTYL TIN
30UJ	UG/KG	DIBUTYL TIN
35N	UG/KG	TRIBUTYL TIN
30UR	UG/KG	MONOPHENYL TIN
30UJ	UG/KG	DIPHENYL TIN
30U	UG/KG	TRIPHENYL TIN
60UJ	MG/KG	TIN
35 %	%	MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAJ-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

\*\*\*\*\*

RESULTS	UNITS	PARAMETER
93JC	UG/KG	MONOBUTYL TIN
930C	UG/KG	DIBUTYL TIN
970C	UG/KG	TRIBUTYL TIN
31UR	UG/KG	MONOPHENYL TIN
31UJ	UG/KG	DIPHENYL TIN
31U	UG/KG	TRIPHENYL TIN
35J	MG/KG	TIN
35	%	% MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE      \*NA-NOT ANALYZED      \*NAI-INTERFERENCES      \*J-ESTIMATED VALUE      \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN      \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE      \*NA-NOT ANALYZED      \*NAI-INTERFERENCES      \*J-ESTIMATED VALUE      \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
 \*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN      \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
 \*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** *****
** PROJECT NO. 89-537   SAMPLE NO. 39706   SAMPLE TYPE. SOIL   PROG FILE: NSF   COLLECTED BY: E CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: LC-SB-05   COLLECTION START: 09/11/89   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: SB05   MD NO:   **
** *****

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RESULTS UNITS PARAMETER
25UJ UG/KG MONOBUTYL TIN
25U UG/KG DIBUTYL TIN
40N UG/KG TRIBUTYL TIN
25UR UG/KG MONOPHENYL TIN
25UJ UG/KG DIPHENYL TIN
25U UG/KG TRIPHENYL TIN
8 4UJ MG/KG TIN
20 % % MOISTURE

```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

```
*** ** ** ** **
**  PROJECT NO. 89-537   SAMPLE NO. 39797   SAMPLE TYPE. SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
**  SOURCE. LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
**  STATION ID: LC-SD-01   COLLECTION START: 09/11/89   STOP: 00/00/00   **
**  CASE NO.: 12698   SAS NO.: 4921D   D. NO.: SD01   MD NO:   **
**  *** ** ** *****
```

```
RESULTS  UNITS  PARAMETER
30UJ  UG/KG  MONOBUTYL TIN
30U  UG/KG  DIBUTYL TIN
32N  UG/KG  TRIBUTYL TIN
30UR  UG/KG  MONOPHENYL TIN
30UJ  UG/KG  DIPHENYL TIN
30U  UG/KG  TRIPHENYL TIN
90U  MG/KG  TIN
33 %    % MOISTURE
```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*I-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39798 SAMPLE TYPE. SOIL PRG FILEM: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SD-02 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD02 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
65UJ UG/KG MONOBUTYL TIN  
65U UG/KG DIBUTYL TIN  
65U UG/KG TRIBUTYL TIN  
65UR UG/KG MONOPHENYL TIN  
65UJ UG/KG DIPHENYL TIN  
65U UG/KG TRIPHENYL TIN  
16U.I MG/KG TIN  
70 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATLANTA, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** *****
** PROJECT NO. 89-537 SAMPLE NO. 39799 SAMPLE TYPE. SOIL PROG FILE: NSF COLLECTED BY: G CARTON **
** SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA **
** STATION ID: LC-SD-03 COLLECTION START: 09/11/89 STOP: 00/00/00 **
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD03 MD NO: **
**
*** *****

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RESULTS UNITS PARAMETER
26UJ UG/KG MONOBUTYL TIN
26UJ UG/KG DIBUTYL TIN
26UJ UG/KG TRIBUTYL TIN
26UR UG/KG MONOPHENYL TIN
26UJ UG/KG DIPHENYL TIN
26UJ UG/KG TRIPHENYL TIN
6.7UJ MG/KG TIN
22 % % MOISTURE

```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39800 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SD-04 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD04 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
320J UG/KG MONOBUTYL TIN  
320 UG/KG DIBUTYL TIN  
80U UG/KG TRIBUTYL TIN  
32UR UG/KG MONOPHENYL TIN  
320J UG/KG DIPHENYL TIN  
32U UG/KG TRIPHENYL TIN  
110J MG/KG TIN  
38 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAT-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATLANTA, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** **
** PROJECT NO. 89-537 SAMPLE NO. 39801 SAMPLE TYPE. SOIL PROG FILE: NSF COLLECTED BY: G CARTON **
** SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA **
** STATION ID: LC-SD-05 COLLECTION START: 09/11/89 STOP: 00/00/00 **
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: SD05 MD NO: **
**
*** **

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RESULTS UNITS PARAMETER
38UJ UG/KG MONOBUTYL TIN
270C UG/KG DIBUTYL TIN
620C UG/KG TRIBUTYL TIN
38UR UG/KG MONOPHENYL TIN
38UJ UG/KG DIPHENYL TIN
38U UG/KG TRIPHENYL TIN
90J MG/KG TIN
48 % % MOISTURE

```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAJ-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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***
** PROJECT NO. 89-537   SAMPLE NO. 29802   SAMPLE TYPE: SOIL   PROG FILE: NSF   COLLECTED BY: G CARTON   **
** SOURCE: LATEX CONSTRUCTION   CITY: SAVANNAH   ST: GA   **
** STATION ID: LC-SD-06   COLLECTION START: 09/11/89   STOP: 00/00/00   **
** CASE NO.: 12698   SAS NO.: 4921D   D. NO.: SD06   MD NO:   **
**
***
```

```
RESULTS UNITS PARAMETER
41UJ UG/KG MONOBUTYL TIN
130U UG/KG DIBUTYL TIN
41U UG/KG TRIBUTYL TIN
41UR UG/KG MONOPHENYL TIN
41UJ UG/KG DIPHENYL TIN
41U UG/KG TRIPHENYL TIN
130J MG/KG TIN
52 % % MOISTURE
```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE    \*NA-NOT ANALYZED    \*NAI-INTERFERENCES    \*J-ESTIMATED VALUE    \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN    \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\* \*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39797 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SS-01 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: 01 MD NO: \*\*  
\*\* \*\*

RESULTS UNITS PARAMETER  
26UJ UG/KG MONOBUTYL TIN  
26U UG/KG DIBUTYL TIN  
26U UG/KG TRIBUTYL TIN  
26UR UG/KG MONOPHENYL TIN  
26UJ UG/KG DIPHENYL TIN  
26U UG/KG TRIPHENYL TIN  
4.2UJ MG/KG TIN  
24 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATLANTA, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** * * * *
** PROJECT NO. 89-537 SAMPLE NO. 39789 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON **
** SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA **
** STATION ID: LC-SS-02 COLLECTION START: 09/11/89 STOP: 00/00/00 **
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: SS02 MD NO: **
**
*** * * * *

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RESULTS UNITS PARAMETER
90JC UG/KG MONOBUTYL TIN
310C UG/KG DIBUTYL TIN
410JC UG/KG TRIBUTYL TIN
220R UG/KG MONOPHENYL TIN
220J UG/KG DIPHENYL TIN
22U UG/KG TRIPHENYL TIN
11J MG/KG TIN
11 % % MOISTURE

```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

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*** * * * *
** PROJECT NO. 89-537 SAMPLE NO. 39791 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON **
** SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA **
** STATION ID: LC-SS-03 COLLECTION START: 09/11/89 STOP: 00/00/00 **
** CASE NO.: 12698 SAS NO.: 4921D D. NO.: SS03 MD NO: **
**
*** * * * *

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RESULTS UNITS PARAMETER
44JC UG/KG MONOBUTYL TIN
170C UG/KG DIBUTYL TIN
370C UG/KG TRIBUTYL TIN
22UR UG/KG MONOPHENYL TIN
22UJ UG/KG DIPHENYL TIN
22U UG/KG TRIPHENYL TIN
5.30J MG/KG TIN
10 % % MOISTURE

```

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\* \* \* \* \*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39793 SAMPLE TYPE. SOIL PROG. FIRM. NSF COLLECTED BY: G. CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SS-04 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SS04 MD NO: \*\*  
\*\* \* \* \* \* \*

RESULTS UNITS PARAMETER  
270J UG/KG MONOBUTYL TIN  
33N UG/KG DIBUTYL TIN  
35N UG/KG TRIBUTYL TIN  
270R UG/KG MONOPHENYL TIN  
270J UG/KG DIPHENYL TIN  
270 UG/KG TRIPHENYL TIN  
7.90J MG/KG TIN  
25 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM  
EPA-REGION IV ESD, ATHENS, GA.

12/13/89

SPECIFIED ANALYSIS DATA REPORT

\*\*\*  
\*\* PROJECT NO. 89-537 SAMPLE NO. 39795 SAMPLE TYPE: SOIL PROG FILE: NSF COLLECTED BY: G CARTON \*\*  
\*\* SOURCE: LATEX CONSTRUCTION CITY: SAVANNAH ST: GA \*\*  
\*\* STATION ID: LC-SS-06 COLLECTION START: 09/11/89 STOP: 00/00/00 \*\*  
\*\* CASE NO.: 12698 SAS NO.: 4921D D. NO.: SS06 MD NO: \*\*  
\*\*  
\*\*\*

RESULTS UNITS PARAMETER  
32JC UG/KG MONOBUTYL TIN  
81C UG/KG DIBUTYL TIN  
93C UG/KG TRIBUTYL TIN  
21UR UG/KG MONOPHENYL TIN  
21UJ UG/KG DIPHENYL TIN  
21U UG/KG TRIPHENYL TIN  
180J MG/KG TIN  
7 % % MOISTURE

\*\*\*FOOTNOTES\*\*\*

\*A-AVERAGE VALUE \*NA-NOT ANALYZED \*NAI-INTERFERENCES \*J-ESTIMATED VALUE \*N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL  
\*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN \*I-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN  
\*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.



# Site Inspection Report



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION	
01 STATE GA	02 SITE NUMBER D980803696

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, Common, or Descriptive Name of Site) Latex Construction Co.		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 3126 River Road			
03 CITY Thunderbolt		04 STATE GA	05 ZIP CODE 31404	06 COUNTY Chatham	07 COUNTY CODE 2006
09 COORDINATES LATITUDE 32° 12' 23.00" N LONGITUDE 081° 02' 22.00" W		10 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER <input type="checkbox"/> G. UNKNOWN			

III. INSPECTION INFORMATION

01 DATE OF INSPECTION 09 11 89 MONTH DAY YEAR	02 SITE STATUS <input type="checkbox"/> ACTIVE <input type="checkbox"/> INACTIVE	03 YEARS OF OPERATION 1963 Present BEGINNING YEAR ENDING YEAR
04 AGENCY PERFORMING INSPECTION (Check all that apply) <input checked="" type="checkbox"/> A. EPA <input checked="" type="checkbox"/> B. EPA CONTRACTOR NUS Corp <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR <input type="checkbox"/> E. STATE <input type="checkbox"/> F. STATE CONTRACTOR <input type="checkbox"/> G. OTHER		

05 CHIEF INSPECTOR Geoffrey Carton	06 TITLE Project Manager	07 ORGANIZATION NUS	08 TELEPHONE NO (404) 938-7710
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO
Ron Young	Sampler	NUS	( )
David Mattiford	Sampler	NUS	( )
Gordon Buchanan	Health + Safety	NUS	( )
Jerald Tittle	Sampler	NUS	( )
Roger Franklin	Sampling QA	NUS	( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Leon White	Lead Safety & Security	3126 River Rd Thunderbolt, GA	(912) 351-3464
Gary Raven	Environmentalist	Trinity Industries Dallas, Texas	(214) 631-4420 Ext 409
Ruby Cherry III	Consultant for Property Owner	Westinghouse Environmental Savannah, GA	(912) 233-3443
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one) <input checked="" type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT	18 TIME OF INSPECTION 0800	19 WEATHER CONDITIONS Clear ~70° F
--	-------------------------------	---------------------------------------

IV. INFORMATION AVAILABLE FROM

01 CONTACT Mario Villamarzo	02 OF (Agency Organization) EPA	03 TELEPHONE NO ( ) 1347-5065		
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM Geoffrey Carton	05 AGENCY FITA	06 ORGANIZATION NUS Corp	07 TELEPHONE NO 404 938-7710	08 DATE 04-05-90 MONTH DAY YEAR



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

GA D9E0803696

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES A SOLID B POWDER/FINES C SLUDGE D OTHER E SLURRY F LIQUID G GAS Specify	02 WASTE QUANTITY AT SITE Measure of waste quantities TONS CUBIC YARDS NO. OF DRUMS	03 WASTE CHARACTERISTICS A TOXIC B CORROSIVE C RADIOACTIVE D PERSISTENT E SOLUBLE F INFECTIOUS G FLAMMABLE H IGNITABLE J HIGHLY VOLATILE K EXPLOSIVE L REACTIVE M INCOMPATIBLE N NOT APPLICABLE
--	---	--

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	UNKNOWN		
PSD	PESTICIDES	UNKNOWN		
OCC	OTHER ORGANIC CHEMICALS	UNKNOWN		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	UNKNOWN		

IV. HAZARDOUS SUBSTANCES See Appendix for most frequently cited CAS Numbers.

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/ DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Arsenic		Uncontained	14	mg/kg
MES	Barium		"	130	"
MES	Beryllium		"	2.9	"
MES	Cadmium		"	17	"
MES	Chromium		"	97 (estimated)	"
MES	Cobalt		"	30	"
MES	Copper		"	1700	"
MES	Lead		"	1500	"
MES	Mercury		"	1.2	"
MES	Nickel		"	230	"
MES	Vanadium		"	110	"
MES	Zinc		"	2600	"
OCC	Monobutyl tin		"	99	ug/kg
OCC	Dibutyl tin		"	930	"
OCC	Tributyl tin		"	970	"
See next page for Additional Compounds					

V. FEEDSTOCKS See Appendix for CAS Numbers

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g. State files, sample analysis, etc.)

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01 STATE	02 SITE NUMBER
GA	0480803696

Continued

[illegible]



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
CA 09ECC03696

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A GROUNDWATER CONTAMINATION 02 ☒ OBSERVED (DATE 7/25/88) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED -0- 04 NARRATIVE DESCRIPTION

low concentrations of organic solvents detected in surficial aquifer

01 ☒ B SURFACE WATER CONTAMINATION 02 ☒ OBSERVED (DATE 9/89) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

contamination of sediments in Williamson Creek

01 ☒ C CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE ) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

sandblasting is conducted in the open the release of contaminated particulates is likely

01 ☒ D FIRE EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE ) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

None Observed

01 ☒ E DIRECT CONTACT 02 ☐ OBSERVED (DATE ) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

Contaminated surface soils found on site 9/89

01 ☒ F CONTAMINATION OF SOIL 02 ☒ OBSERVED (DATE 9/89) ☐ POTENTIAL ☐ ALLEGED  
03 AREA POTENTIALLY AFFECTED: >1 Acres 04 NARRATIVE DESCRIPTION

surface and subsurface soils contaminated with inorganic and organic compounds

01 ☐ G DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE ) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

unlikely drinking water for surrounding communities is from a confined aquifer

01 ☐ H WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE ) ☐ POTENTIAL ☐ ALLEGED  
03 WORKERS POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

None observed

01 ☐ I POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE ) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 04 NARRATIVE DESCRIPTION

None observed



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

GA D980803696

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ J. DAMAGE TO FLORA  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

Contaminants have entered Williamson Creek + surrounding Salt Marsh

01 ☒ K. DAMAGE TO FAUNA  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

See above

01 ☒ L. CONTAMINATION OF FOOD CHAIN  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

There are recreational + commercial fisheries in adjacent waters

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES  
(Spills, Runoff, Standing liquids, Leaking drums)

02 ☒ OBSERVED (DATE 9/11/89)

☐ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

04 NARRATIVE DESCRIPTION

a number of stains were observed around property. one stain was sampled and contained high concentrations of PNA's.

01 ☒ N. DAMAGE TO OFFSITE PROPERTY  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☒ POTENTIAL

☐ ALLEGED

Contamination may have entered adjacent salt marsh

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

None observed

01 ☐ P. ILLEGAL UNAUTHORIZED DUMPING  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE \_\_\_\_\_)

☐ POTENTIAL

☐ ALLEGED

None observed

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g. State files, sample analysis reports)

State, EPA + FIT files



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION  
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
GA 09E0803696

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED <small>(Check all that apply)</small>	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
<input type="checkbox"/> A NPDES				
<input type="checkbox"/> B UIC				
<input checked="" type="checkbox"/> C AIR	GA09E0248615			Issued to Loxley
<input checked="" type="checkbox"/> D RCRA	GA09E122368E			file closed " "
<input type="checkbox"/> E RCRA INTERIM STATUS				
<input type="checkbox"/> F SPCC PLAN				
<input type="checkbox"/> G STATE <small>Specify</small>				
<input type="checkbox"/> H LOCAL <small>Specify</small>				
<input type="checkbox"/> I OTHER <small>Specify</small>				
<input type="checkbox"/> J NONE				

III. SITE DESCRIPTION

01 STORAGE/ DISPOSAL <small>(Check all that apply)</small>	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT <small>(Check all that apply)</small>	05 OTHER
<input type="checkbox"/> A. SURFACE IMPOUNDMENT			<input type="checkbox"/> A. INCINERATION	<input checked="" type="checkbox"/> A. BUILDINGS ON SITE
<input checked="" type="checkbox"/> B. PILES	837	yd <sup>3</sup>	<input type="checkbox"/> B. UNDERGROUND INJECTION	
<input checked="" type="checkbox"/> C. DRUMS, ABOVE GROUND			<input type="checkbox"/> C. CHEMICAL/ PHYSICAL	06 AREA OF SITE ~27 acres
<input checked="" type="checkbox"/> D. TANK, ABOVE GROUND			<input type="checkbox"/> D. BIOLOGICAL	
<input type="checkbox"/> E. TANK, BELOW GROUND			<input type="checkbox"/> E. WASTE OIL PROCESSING	
<input type="checkbox"/> F. LANDFILL			<input type="checkbox"/> F. SOLVENT RECOVERY	
<input type="checkbox"/> G. LANDFARM			<input type="checkbox"/> G. OTHER RECYCLING/ RECOVERY	
<input type="checkbox"/> H. OPEN DUMP			<input type="checkbox"/> H. OTHER <small>(Specify)</small>	
<input type="checkbox"/> I. OTHER <small>(Specify)</small>				

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)  
☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☒ NO

02 COMMENTS

Access from land is restricted by fence

VI. SOURCES OF INFORMATION Cite specific references, e.g. state files, lab/analysis reports.

State, EPA & FIT files



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
GA 09E0603696

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY  
(Check as applicable)

SURFACE WELL  
COMMUNITY A ☐ B ☒  
NON-COMMUNITY C ☐ D ☒

02 STATUS

ENDANGERED A ☐ AFFECTED B ☐ MONITORED C ☐  
D ☐ E ☐ F ☐

03 DISTANCE TO SITE

A 1/2 (mi)  
B \_\_\_\_\_ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING  
(Other sources available)  
☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION ☐ D. NOT USED, UNUSEABLE  
(Limited other sources available)  
☐ COMMERCIAL, INDUSTRIAL, IRRIGATION  
(No other water sources available)

02 POPULATION SERVED BY GROUND WATER 160,000

03 DISTANCE TO NEAREST DRINKING WATER WELL 0.5 (mi)

04 DEPTH TO GROUNDWATER

10 (ft)

05 DIRECTION OF GROUNDWATER FLOW

Generally S + E

06 DEPTH TO AQUIFER  
OF CONCERN

200 (ft)

07 POTENTIAL YIELD  
OF AQUIFER

\_\_\_\_\_ (gpd)

08 SOLE SOURCE AQUIFER

☐ YES ☒ NO

09 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)

10 RECHARGE AREA

☐ YES COMMENTS  
☐ NO

11 DISCHARGE AREA

☐ YES COMMENTS  
☐ NO

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR (RECREATION)  
DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY  
IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED, POTENTIALLY AFFECTED BODIES OF WATER

NAME:

AFFECTED

DISTANCE TO SITE

Williamson Creek  
Wilmington River

☒  
☐  
☐

-0- (mi)  
-0- (mi)  
\_\_\_\_\_ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE

A 1459  
NO. OF PERSONS

TWO (2) MILES OF SITE

B 17601  
NO. OF PERSONS

THREE (3) MILES OF SITE

C 45424  
NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

0.1 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

04 DISTANCE TO NEAREST OFF-SITE BUILDING

0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site: e.g., rural, village, densely populated urban area)

Nearly all of Thunderbolt (pop. ~2500) is within one mile  
and a large portion of Savannah is within 4 miles



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

GA 09E0803696

VI. ENVIRONMENTAL INFORMATION

03 PERMEABILITY OF UNSATURATED ZONE (check one)

A  $10^{-10} - 10^{-11}$  cm/sec B  $10^{-9} - 10^{-10}$  cm/sec ☒ C  $10^{-8} - 10^{-9}$  cm/sec D GREATER THAN  $10^{-8}$  cm/sec

04 PERMEABILITY OF BEDROCK (check one)

A IMPERMEABLE  $< 10^{-10}$  cm/sec B RELATIVELY IMPERMEABLE  $10^{-10} - 10^{-9}$  cm/sec C RELATIVELY PERMEABLE  $10^{-8} - 10^{-6}$  cm/sec D VERY PERMEABLE Greater than  $10^{-6}$  cm/sec

05 DEPTH TO BEDROCK

(ft)

06 DEPTH OF CONTAMINATED SOIL ZONE

At least 10 (ft)

07 SOIL pH

08 NET PRECIPITATION

4 (in)

09 ONE YEAR 24 HOUR RAINFALL

3.5 (in)

10 SLOPE

%

DIRECTION OF SITE SLOPE

TERRAIN AVERAGE SLOPE

%

11 FLOOD POTENTIAL

SITE IS IN YEAR FLOODPLAIN

10

☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

12 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE

OTHER

A -0- (mi)

B NA (mi)

13 DISTANCE TO CRITICAL HABITAT (of endangered species)

(mi)

ENDANGERED SPECIES: NA

14 LAND USE IN VICINITY

DISTANCE TO

COMMERCIAL/INDUSTRIAL

RESIDENTIAL AREAS, NATIONAL STATE PARKS,  
FORESTS, OR WILDLIFE RESERVES

AGRICULTURAL LANDS  
PRIME AG LAND AG LAND

A -0- (mi)

B 0.1 (mi)

C (mi) D (mi)

15 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

VII. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis reports)



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
CA 0980E03646

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER		INorganic analysis by Ostra Chem, Salt Lake City, UT	
WASTE			
AIR		organic analysis by CompuChem Labs, RTP, NC	
RUNOFF			
SPILL		SAS by Environmental Science + Engineering	
SOIL	11	Gainesville, FL	12/89
VEGETATION			
OTHER Sediment	6		12/89

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE <input checked="" type="checkbox"/> GROUND <input checked="" type="checkbox"/> AERIAL	02 IN CUSTODY OF <u>Nus. Corp</u> <small>Name of organization or individual</small>
03 MAPS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS <u>Nus Corp</u>

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

FIT files



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
GA 09809303696

II. CURRENT OWNER(S)

PARENT COMPANY (if applicable)

01 NAME Thunderbolt Marine Inc			02 D+B NUMBER			08 NAME			09 D+B NUMBER								
03 STREET ADDRESS (P.O. Box, RFD, etc.) 3126 River Rd			04 SIC CODE			10 STREET ADDRESS (P.O. Box, RFD, etc.)			11 SIC CODE								
05 CITY Thunderbolt			06 STATE GA			07 ZIP CODE 31414			12 CITY			13 STATE			14 ZIP CODE		
01 NAME			02 D+B NUMBER			08 NAME			09 D+B NUMBER								
03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE			10 STREET ADDRESS (P.O. Box, RFD, etc.)			11 SIC CODE								
05 CITY			06 STATE			07 ZIP CODE			12 CITY			13 STATE			14 ZIP CODE		
01 NAME			02 D+B NUMBER			08 NAME			09 D+B NUMBER								
03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE			10 STREET ADDRESS (P.O. Box, RFD, etc.)			11 SIC CODE								
05 CITY			06 STATE			07 ZIP CODE			12 CITY			13 STATE			14 ZIP CODE		
01 NAME			02 D+B NUMBER			08 NAME			09 D+B NUMBER								
03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE			10 STREET ADDRESS (P.O. Box, RFD, etc.)			11 SIC CODE								
05 CITY			06 STATE			07 ZIP CODE			12 CITY			13 STATE			14 ZIP CODE		

III. PREVIOUS OWNER(S) (List most recent first)

IV. REALTY OWNER(S) (If applicable, list most recent first)

01 NAME			02 D+B NUMBER			01 NAME			02 D+B NUMBER								
03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE			03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE								
05 CITY			06 STATE			07 ZIP CODE			05 CITY			06 STATE			07 ZIP CODE		
01 NAME			02 D+B NUMBER			01 NAME			02 D+B NUMBER								
03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE			03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE								
05 CITY			06 STATE			07 ZIP CODE			05 CITY			06 STATE			07 ZIP CODE		
01 NAME			02 D+B NUMBER			01 NAME			02 D+B NUMBER								
03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE			03 STREET ADDRESS (P.O. Box, RFD, etc.)			04 SIC CODE								
05 CITY			06 STATE			07 ZIP CODE			05 CITY			06 STATE			07 ZIP CODE		

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, records)



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

GA D980803696

II. CURRENT OPERATOR (Provide if different from owner)

OPERATOR'S PARENT COMPANY (If applicable)

01 NAME Thunderbolt Shipbuilding & Repair	02 D+B NUMBER	10 NAME Trinity Industries	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 3126 River Rd	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.) PO Box 568887	13 SIC CODE
05 CITY Thunderbolt	06 STATE GA	07 ZIP CODE 31414	14 CITY Dallas
			15 STATE TX
			16 ZIP CODE 75356
08 YEARS OF OPERATION ~2	09 NAME OF OWNER		

III. PREVIOUS OPERATOR(S) (List most recent first. Provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

01 NAME Lockheed Shipbuilding	02 D+B NUMBER	10 NAME Lockheed Shipbuilding	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 3126 River Rd	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.) 2929 16 <sup>th</sup> Ave S.W.	13 SIC CODE
05 CITY Thunderbolt	06 STATE GA	07 ZIP CODE 31414	14 CITY Seattle
			15 STATE WA
			16 ZIP CODE 98134
08 YEARS OF OPERATION ~1986-1988	09 NAME OF OWNER DURING THIS PERIOD		

01 NAME Latex Construction	02 D+B NUMBER	10 NAME Same as property owner	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY
			15 STATE
			16 ZIP CODE
08 YEARS OF OPERATION ~1963-1986	09 NAME OF OWNER DURING THIS PERIOD W.E. Honey		

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY
			15 STATE
			16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, samplers analysis reports)

EPA, State & FIT files



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

GA D980803696

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
05 CITY	06 STATE 07 ZIP CODE	

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE 07 ZIP CODE	05 CITY	06 STATE 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

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POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

GA 098003696

II. PAST RESPONSE ACTIVITIES

01 <input type="checkbox"/> A. WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE	03 AGENCY
None Documented (ND)		
01 <input type="checkbox"/> B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input checked="" type="checkbox"/> E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE 1/89	03 AGENCY Done by PRP
45 cu yds. contaminated surface soils removed		
01 <input type="checkbox"/> F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> H. ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> L. ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY
01 <input type="checkbox"/> M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> N. CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> O. EMERGENCY Diking SURFACE WATER DIVERSION 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY
ND		
01 <input type="checkbox"/> Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY
ND		



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
GA 0980803696

II. PAST RESPONSE ACTIVITIES (continued)

01 <input type="checkbox"/> R BARRIER WALLS CONSTRUCTED 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> S CAPPING COVERING 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> T BULK TANKAGE REPAIRED 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> U GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> V BOTTOM SEALED 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> W GAS CONTROL 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> X FIRE CONTROL 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> Y LEACHATE TREATMENT 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> Z AREA EVACUATED 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> 1 ACCESS TO SITE RESTRICTED 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> 2 POPULATION RELOCATED 04 DESCRIPTION ND	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> 3 OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE _____	03 AGENCY _____

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

FIT files



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT  
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	0980803696

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION YES / NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY ENFORCEMENT ACTION

III. SOURCES OF INFORMATION Cite specific references, e.g. state files, sample analysis reports.

## APPENDIX

### I. FEEDSTOCKS

CAS Number	Chemical Name	CAS Number	Chemical Name	CAS Number	Chemical Name
1. 7664-41-7	Ammonia	14. 1317-38-0	Cupric Oxide	27. 7778-50-9	Potassium Dichromate
2. 7440-36-0	Antimony	15. 7758-98-7	Cupric Sulfate	28. 1310-58-3	Potassium Hydroxide
3. 1309-64-4	Antimony Trioxide	16. 1317-39-1	Cuprous Oxide	29. 115-07-1	Propylene
4. 7440-38-2	Arsenic	17. 74-85-1	Ethylene	30. 10588-01-9	Sodium Dichromate
5. 1327-53-3	Arsenic Trioxide	18. 7647-01-0	Hydrochloric Acid	31. 1310-73-2	Sodium Hydroxide
6. 21109-95-5	Barium Sulfide	19. 7664-39-3	Hydrogen Fluoride	32. 7646-78-8	Stannic Chloride
7. 7726-95-6	Bromine	20. 1335-25-7	Lead Oxide	33. 7772-99-8	Stannous Chloride
8. 106-99-0	Butadiene	21. 7439-97-6	Mercury	34. 7664-93-9	Sulfuric Acid
9. 7440-43-9	Cadmium	22. 74-82-8	Methane	35. 108-88-3	Toluene
10. 7782-50-5	Chlorine	23. 91-20-3	Napthalene	36. 1330-20-7	Xylene
11. 12737-27-8	Chromite	24. 7440-02-0	Nickel	37. 7646-85-7	Zinc Chloride
12. 7440-47-3	Chromium	25. 7697-37-2	Nitric Acid	38. 7733-02-0	Zinc Sulfate
13. 7440-48-4	Cobalt	26. 7723-14-0	Phosphorus		

### II. HAZARDOUS SUBSTANCES

CAS Number	Chemical Name	CAS Number	Chemical Name	CAS Number	Chemical Name
1. 75-07-0	Acetaldehyde	47. 1303-33-9	Arsenic Trisulfide	92. 142-71-2	Cupric Acetate
2. 64-19-7	Acetic Acid	48. 542-62-1	Barium Cyanide	93. 12002-03-8	Cupric Acetoarsenite
3. 108-24-7	Acetic Anhydride	49. 71-43-2	Benzene	94. 7447-39-4	Cupric Chloride
4. 75-86-5	Acetone Cyanohydrin	50. 65-85-0	Benzoic Acid	95. 3251-23-8	Cupric Nitrate
5. 506-96-7	Acetyl Bromide	51. 100-47-0	Benzonitrile	96. 5893-66-3	Cupric Oxalate
6. 75-36-5	Acetyl Chloride	52. 98-88-4	Benzoyl Chloride	97. 7758-98-7	Cupric Sulfate
7. 107-02-8	Acrolein	53. 100-44-7	Benzyl Chloride	98. 10380-29-7	Cupric Sulfate Ammoniated
8. 107-13-1	Acrylonitrile	54. 7440-41-7	Beryllium	99. 815-82-7	Cupric Tartrate
9. 124-04-9	Adipic Acid	55. 7787-47-5	Beryllium Chloride	100. 506-77-4	Cyanogen Chloride
10. 309-00-2	Aldrin	56. 7787-49-7	Beryllium Fluoride	101. 110-82-7	Cyclohexane
11. 10043-01-3	Aluminum Sulfate	57. 13597-99-4	Beryllium Nitrate	102. 94-75-7	2,4-D Acid
12. 107-18-6	Allyl Alcohol	58. 123-86-4	Butyl Acetate	103. 94-11-1	2,4-D Esters
13. 107-05-1	Allyl Chloride	59. 84-74-2	n-Butyl Phthalate	104. 50-29-3	DDT
14. 7664-41-7	Ammonia	60. 109-73-9	Butylamine	105. 333-41-5	Diazinon
15. 631-61-8	Ammonium Acetate	61. 107-92-6	Butyric Acid	106. 1918-00-9	Dicamba
16. 1863-63-4	Ammonium Benzoate	62. 543-90-8	Cadmium Acetate	107. 1194-65-6	Dichlobenil
17. 1066-33-7	Ammonium Bicarbonate	63. 7789-42-6	Cadmium Bromide	108. 117-80-6	Dichlone
18. 7789-09-5	Ammonium Bichromate	64. 10108-64-2	Cadmium Chloride	109. 25321-22-6	Dichlorobenzene (all isomers)
19. 1341-49-7	Ammonium Bifluoride	65. 7778-44-1	Calcium Arsenate	110. 266-38-19-7	Dichloropropane (all isomers)
20. 10192-30-0	Ammonium Bisulfite	66. 52740-16-6	Calcium Arsenite	111. 26952-23-8	Dichloropropene (all isomers)
21. 1111-78-0	Ammonium Carbamate	67. 75-20-7	Calcium Carbide	112. 8003-19-8	Dichloropropene- Dichloropropene Mixture
22. 12125-02-9	Ammonium Chloride	68. 13765-19-0	Calcium Chromate	113. 75-99-0	2,2-Dichloropropionic Acid
23. 7788-98-9	Ammonium Chromate	69. 592-01-8	Calcium Cyanide	114. 62-73-7	Dichlorvos
24. 3012-65-5	Ammonium Citrate, Dibasic	70. 26264-06-2	Calcium Dodecylbenzene Sulfonate	115. 60-57-1	Dieldrin
25. 13826-83-0	Ammonium Fluoborate	71. 7778-54-3	Calcium Hypochlorite	116. 109-89-7	Diethylamine
26. 12125-01-8	Ammonium Fluoride	72. 133-06-2	Captan	117. 124-40-3	Dimethylamine
27. 1336-21-6	Ammonium Hydroxide	73. 63-25-2	Carbaryl	118. 25154-54-5	Dinitrobenzene (all isomers)
28. 6009-70-7	Ammonium Oxalate	74. 1563-66-2	Carbofuran	119. 51-28-5	Dinitrophenol
29. 16919-19-0	Ammonium Silicofluoride	75. 75-15-0	Carbon Disulfide	120. 25321-14-6	Dinitrotoluene (all isomers)
30. 7773-06-0	Ammonium Sulfamate	76. 56-23-5	Carbon Tetrachloride	121. 85-00-7	Diquat
31. 12135-76-1	Ammonium Sulfide	77. 57-74-9	Chlordane	122. 298-04-4	Disulfoton
32. 10196-04-0	Ammonium Sulfite	78. 7782-50-5	Chlorine	123. 330-54-1	Diuron
33. 14307-43-8	Ammonium Tartrate	79. 108-90-7	Chlorobenzene	124. 27176-87-0	Dodecylbenzenesulfonic Acid
34. 1762-95-4	Ammonium Thiocyanate	80. 67-66-3	Chloroform	125. 115-29-7	Endosulfan (all isomers)
35. 7783-18-8	Ammonium Thiosulfate	81. 7790-94-5	Chlorosulfonic Acid	126. 72-20-8	Endrin and Metabolites
36. 628-63-7	Amyl Acetate	82. 2921-88-2	Chlorpyrifos	127. 106-89-8	Epichlorohydrin
37. 62-53-3	Aniline	83. 1066-30-4	Chromic Acetate	128. 563-12-2	Ethion
38. 7647-18-9	Antimony Pentachloride	84. 7738-94-5	Chromic Acid	129. 100-41-4	Ethyl Benzene
39. 7789-61-9	Antimony Tribromide	85. 10101-53-8	Chromic Sulfate	130. 107-15-3	Ethylenediamine
40. 10025-91-9	Antimony Trichloride	86. 10049-05-5	Chromous Chloride	131. 106-93-4	Ethylene Dibromide
41. 7783-56-4	Antimony Trifluoride	87. 544-18-3	Cobaltous Formate	132. 107-06-2	Ethylene Dichloride
42. 1309-64-4	Antimony Trioxide	88. 14017-41-5	Cobaltous Sulfamate	133. 60-00-4	EDTA
43. 1303-32-8	Arsenic Disulfide	89. 56-72-4	Coumaphos	134. 1185-57-5	Ferric Ammonium Citrate
44. 1303-28-2	Arsenic Pentoxide	90. 1319-77-3	Cresol	135. 2944-67-4	Ferric Ammonium Oxalate
45. 7784-34-1	Arsenic Trichloride	91. 4170-30-3	Crotonaldehyde	136. 7705-08-0	Ferric Chloride
46. 1327-53-3	Arsenic Trioxide				

## II. HAZARDOUS SUBSTANCES

CAS Number	Chemical Name	CAS Number	Chemical Name	CAS Number	Chemical Name
137. 7783-50-8	Ferric Fluoride	192. 74-89-5	Monomethylamine	249. 7632-00-0	Sodium Nitrate
138. 10421-48-4	Ferric Nitrate	193. 300-76-5	Naled	250. 7558-79-4	Sodium Phosphate, D-basic
139. 10028-22-5	Ferric Sulfate	194. 91-20-3	Naphthalene	251. 7601-54-9	Sodium Phosphate, Tri-basic
140. 10045-89-3	Ferrous Ammonium Sulfate	195. 1338-24-5	Naphthenic Acid	252. 10102-18-8	Sodium Selenite
141. 7758-94-3	Ferrous Chloride	196. 7440-02-0	Nickel	253. 7789-06-2	Strontium Chromate
142. 7720-78-7	Ferrous Sulfate	197. 15699-18-0	Nickel Ammonium Sulfate	254. 57-24-9	Strychnine and Salts
143. 206-44-0	Fluorobenzene	198. 37211-05-5	Nickel Chloride	255. 100-420-5	Styrene
144. 50-00-0	Formaldehyde	199. 12054-48-7	Nickel Hydroxide	256. 12771-08-3	Sulfur Monochloride
145. 64-18-6	Formic Acid	200. 14216-75-2	Nickel Nitrate	257. 7664-93-9	Sulfuric Acid
146. 110-17-8	Fumaric Acid	201. 7786-81-4	Nickel Sulfate	258. 93-76-5	2,4,5-T Acid
147. 98-01-1	Furfural	202. 7697-37-2	Nitric Acid	259. 2008-46-0	2,4,5-T Amines
148. 86-50-0	Guthion	203. 98-95-3	Nitrobenzene	260. 93-79-8	2,4,5-T Esters
149. 76-44-8	Heptachlor	204. 10102-44-0	Nitrogen Dioxide	261. 13560-99-1	2,4,5-T Salts
150. 118-74-1	Hexachlorobenzene	205. 25154-55-6	Nitrophenol (all isomers)	262. 93-72-1	2,4,5-TP Acid
151. 87-68-3	Hexachlorobutadiene	206. 1321-12-6	Nitrotoluene	263. 32534-95-5	2,4,5-TP Acid Esters
152. 67-72-1	Hexachloroethane	207. 30525-89-4	Paraformaldehyde	264. 72-54-8	TDE
153. 70-30-4	Hexachlorophene	208. 56-38-2	Parathion	265. 95-94-3	Tetrachlorobenzene
154. 77-47-4	Hexachlorocyclopentadiene	209. 608-93-5	Pentachlorobenzene	266. 127-18-4	Tetrachloroethane
155. 7647-01-0	Hydrochloric Acid (Hydrogen Chloride)	210. 87-86-5	Pentachlorophenol	267. 78-00-2	Tetraethyl Lead
156. 7664-39-3	Hydrofluoric Acid (Hydrogen Fluoride)	211. 85-01-8	Phenanthrene	268. 107-49-3	Tetraethyl Pyrophosphate
157. 74-90-8	Hydrogen Cyanide	212. 108-95-2	Phenol	269. 7446-18-6	Thallium (I) Sulfate
158. 7783-06-4	Hydrogen Sulfide	213. 75-44-5	Phosgene	270. 108-88-3	Toluene
159. 78-79-5	Isoprene	214. 7664-38-2	Phosphoric Acid	271. 8001-35-2	Toxaphene
160. 42504-46-1	Isopropanolamine	215. 7723-14-0	Phosphorus	272. 12002-48-1	Trichlorobenzene (all isomers)
161. 115-32-2	Keithane	216. 10025-87-3	Phosphorus Oxichloride	273. 52-68-6	Trichlorfon
162. 143-50-0	Kepone	217. 1314-80-3	Phosphorus Pentasulfide	274. 25323-89-1	Trichloroethane (all isomers)
163. 301-04-2	Lead Acetate	218. 7719-12-2	Phosphorus Trichloride	275. 79-01-6	Trichloroethylene
164. 3687-31-8	Lead Arsenate	219. 7784-41-0	Potassium Arsenate	276. 25167-82-2	Trichlorophenol (all isomers)
165. 7758-95-4	Lead Chloride	220. 10124-50-2	Potassium Arsenite	277. 27323-41-7	Triethanolamine
166. 13814-96-5	Lead Fluoborate	221. 7778-50-9	Potassium Bichromate	278. 121-44-8	Dodecylbenzenesulfonate
167. 7783-46-2	Lead Fluoride	222. 7789-00-6	Potassium Chromate	279. 75-50-3	Triethylamine
168. 10101-63-0	Lead Iodide	223. 7722-64-7	Potassium Permanganate	280. 541-09-3	Trimethylamine
169. 18256-98-9	Lead Nitrate	224. 2312-35-8	Propargite	281. 10102-06-4	Uranyl Acetate
170. 7428-48-0	Lead Stearate	225. 79-09-4	Propionic Acid	282. 1314-62-1	Uranyl Nitrate
171. 15739-80-7	Lead Sulfate	226. 123-62-6	Propionic Anhydride	283. 27774-13-6	Vanadium Pentoxide
172. 1314-87-0	Lead Sulfide	227. 1336-36-3	Polychlorinated Biphenyls	284. 108-05-4	Vanadyl Sulfate
173. 592-87-0	Lead Thiocyanate	228. 151-50-8	Potassium Cyanide	285. 75-35-4	Vinyl Acetate
174. 58-89-9	Lindane	229. 1310-58-3	Potassium Hydroxide	286. 1300-71-6	Vinylidene Chloride
175. 14307-35-8	Lithium Chromate	230. 75-56-9	Propylene Oxide	287. 557-34-6	Xylenol
176. 121-75-5	Malthion	231. 121-29-9	Pyrethrins	288. 52628-25-8	Zinc Acetate
177. 110-16-7	Maleic Acid	232. 91-22-5	Quinoline	289. 1332-07-6	Zinc Ammonium Chloride
178. 108-31-6	Maleic Anhydride	233. 108-46-3	Resorcinol	290. 7699-45-8	Zinc Borate
179. 2032-65-7	Mercaptodimethur	234. 7446-08-4	Selenium Oxide	291. 3486-35-9	Zinc Bromide
180. 592-04-1	Mercuric Cyanide	235. 7761-88-8	Silver Nitrate	292. 7646-85-7	Zinc Carbonate
181. 10045-94-0	Mercuric Nitrate	236. 7631-89-2	Sodium Arsenate	293. 557-21-1	Zinc Chloride
182. 7783-35-9	Mercuric Sulfate	237. 7784-46-5	Sodium Arsenite	294. 7783-49-3	Zinc Cyanide
183. 592-85-8	Mercuric Thiocyanate	238. 10588-01-9	Sodium Bichromate	295. 557-41-5	Zinc Fluoride
184. 10415-75-5	Mercurous Nitrate	239. 1333-83-1	Sodium Bisulfite	296. 7779-86-4	Zinc Formate
185. 72-43-5	Methoxychlor	240. 7631-90-5	Sodium Chromate	297. 7779-88-6	Zinc Hydrosulfite
186. 74-93-1	Methyl Mercaptan	241. 7775-11-3	Sodium Cyanide	298. 127-82-2	Zinc Nitrate
187. 80-62-6	Methyl Methacrylate	242. 143-33-9	Sodium Dodecylbenzene Sulfonate	299. 1314-84-7	Zinc Phenolsulfonate
188. 298-00-0	Methyl Parathion	243. 25155-30-0	Sodium Fluoride	300. 16871-71-9	Zinc Phosphide
189. 7786-34-7	Mevinphos	244. 7681-49-4	Sodium Hydroxide	301. 7733-02-0	Zinc Silicofluoride
190. 315-18-4	Mexacarbate	245. 16721-80-5	Sodium Hypochlorite	302. 13746-89-9	Zinc Sulfate
191. 75-04-7	Monoethylamine	246. 1310-73-2	Sodium Methylate	303. 16923-95-8	Zirconium Nitrate
		247. 7681-52-9		304. 14644-61-2	Zirconium Potassium Fluoride
		248. 124-41-4		305. 10026-11-6	Zirconium Sulfate
					Zirconium Tetrachloride

# Reference 36

Tetra Tech EM, INC.

## Latex Construction Expanded Site Inspection

TDD No. 4T-01-10-A-006

Logbook No.

EPA JASK Monitor: Charles King  
Tetra Tech EM Inc. START project manager:  
(For Single Project Use Only) Frank Jewell

March 30, 2001

Project No.: All samples will be split

Project Location: With the PRP Contractor -

Site ID/GPS: SAME

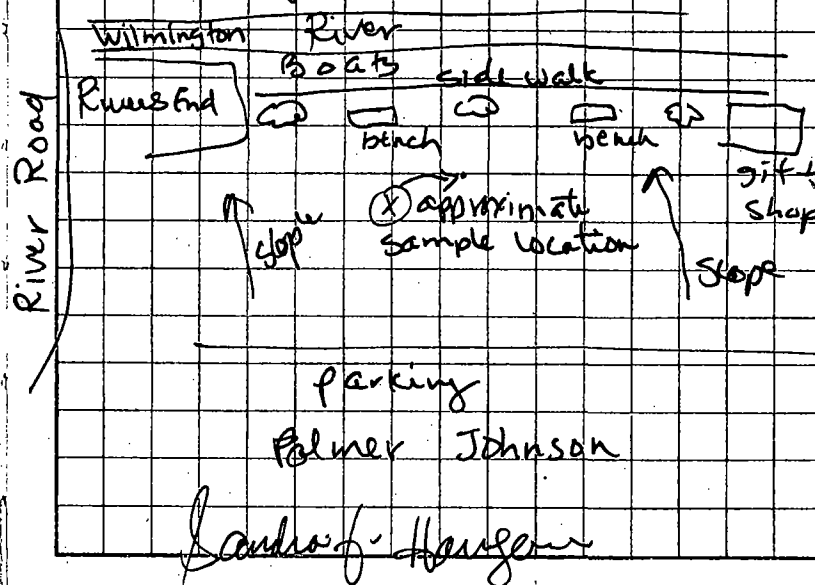
Issuance No.	Date	Name	Last Page Used
		All samples collected	
		will be collected in	
		accordance with the	
		EPA Region 4 Science & Ecosystem Support Division	
		Environmental Investigations	
		Standard Operating Procedures & Quality Assurance Manual.	

Friday March 30, 2001

Field Logbook No. \_\_\_\_\_ Date \_\_\_\_\_

1010 Tetra Tech collects the rinsate blank sample. This sample was split the PRP Contractors (same) This sample was collected for full scan analysis.

1130 Tetra Tech is at the location of sample LC-02-SS/SB between the River's End Restaurant and a ~~store~~ Gift Shop. There is a sign on the steps ~~near~~ Railing near the River's End Restaurant that says "no fishing from the docks"



2 Friday March 30, 2001

Field Logbook No. \_\_\_\_\_

Date \_\_\_\_\_

1135 Tetra Tech collects surface soil sample LC-02-SS between the River's End Restaurant & a gift shop. The sample is collected from an area of minor stressed vegetation - or ~~near~~ <sup>SP</sup> ~~of~~. The soil is visible - no grass is in the immediate sampling location. The sample is collected from 0-6 inches b/s. The VDAs ~~and~~ <sup>SP</sup> were collected first followed by Extractables & metals. This same procedure will be conducted at all sampling locations. The soil is dark sandy soil with small roots.

- The split sample was collected by putting a small amount (spoon full) of soil in each jar until all sample jars were filled.

- Tetra Tech is advancing to collect the subsurface soil sample. There are small pieces of shell in the soil.

Small pieces of wood are in the soil.

Sandra H. Haysan

Friday March 30, 2001

3

Field Logbook No. \_\_\_\_\_

Date \_\_\_\_\_

1205 Tetra Tech collects sample LC-02-SS at the same location as LC-02-SS. The sample was collected at about 2 feet b/s. The subsurface soil sample is primarily clay. The coordinates of sample station 02 are:

- LC-02-SS/SS

lat: 32° 01' 30.0" N

long: 81° 02' 53.3" W

1504 Tetra Tech @ monitor well # LC-02-~~GW~~ <sup>GW</sup> ~~SS~~ The water level in the well is 5.8 feet b/s. The well is flush to the concrete parking area.

Total depth is 14.1 feet b/s.

14.1	depth	8.3
- 5.8		x 0.653
8.3	x 0.653	1.249
Water column		4.15
		4.88
		5.4199

5.4 x 3 = 16.2 gals

1518 Tetra Tech begins to pump LC-02-GW.

Sandra H. Haysan

4 Friday March 30, 2001

Field Logbook No. \_\_\_\_\_ Date \_\_\_\_\_

The geographic coordinates for well LC-02-GW is  
lat: 32° 1' 25.8" N  
long: 81° 2' 56.657" W

There is a slight brown color to the water - almost clear. There appears to be algae in the well. The date of well installation is not known. The well is reported as an old well.

1538 The water level has gone down significantly - about 2 gallons have been purged.

The well is being allowed to recharge before purging continues.

1600 purging resumes at well LC-02-GW

The well is a PVC well - diameter 4 inches

1609 The well is being allowed to recharge about 1 max gallon needs to be purged.

Sandra Hargis

Friday March 30, 2001

Field Logbook No. \_\_\_\_\_ Date \_\_\_\_\_

1616 Tetra Tech begins to take the water quality readings LC-02-GW

PH	Cond.	Turb.	Temp
8.52	24.2	1	18.0
8.45	24.1	0	17.9
8.44	24.1	0	17.8
8.42	24.0	0	17.8

1630 Tetra Tech collects sample LC-02-GW  
1700 Tetra Tech is finished with the collection of sample LC-02-GW. The well is closed & the covers replaced.

Well LC-02-GW is located at the end of the sidewalk along the metal building at the far end of the Palmer Johnson property opposite from the end where the Brokerage office, gift shop & the River's End restaurant are located.

A paved road is located in this area near the fence line of the property.

Sandra Hargis 3/30/01

Monday April 2, 2001

Field Logbook No. \_\_\_\_\_ Date \_\_\_\_\_

be ~~navigable~~ navigable in the creek.

After about 10 gallons of purging, there is a lot of sediment (black) in the well - LC-09-GW.

0915 - About 12 gallons have been purged from well (monitoring).

LC-09-GW - The water is not clear anymore. There is a grey tint to the water - from sediment in the well.

0925 Tetra Tech calibrates the Hanna.

ph	Cond.	Turb.	Temp.
4.16	4.7	47	9.1

- calibration was done using the standard solution at a temperature of 25°C

0928 The well is being allowed to recharge. Then one more 1-gallon bailer will be purged. Then the water quality readings will be taken.

0935 Purging resumes and the water quality readings will be taken.

Sandra J. Hanson

Monday April 2, 2001

Field Logbook No. \_\_\_\_\_ Date \_\_\_\_\_

LC-09-GW

ph	Cond.	Turb.	Temp.
7.62	7.27	4	17.7°C
8.01	7.04	1	18.1°C
8.06	6.99	3	18.8°C
8.09	6.98	2	18.7

The water quality is stable and the sample will be collected. The water cleared up after recharge and remained clear while the readings were being taken.

0955 Tetra Tech collects sample LC-09-GW from the monitoring well in the bend of the road in the south yard.

1009 Sample collection at LC-09-GW is complete. The well cap and cover of manhole are replaced.

1030 Tetra Tech will now sample LC-05-SS/SR which are north of adjacent to Warehouse Bldg. 201. This area is down gradient of site operations in the south yard.

1043 Tetra Tech collects surface soil sample LC-05-SS near

Sandra J. Hanson

Monday April 2, 2001

Field Logbook No. \_\_\_\_\_

Date \_\_\_\_\_

Warehouse Bldg. 201 - behind a small shed & a dumpster. There is a small grassy area near the fence line. The soil is a brown sandy soil. The sample was collected at 0-6 inches b/s. There is debris in the sample hole (wire, nails) - A piece of burlap was encountered at about 1-2 feet b/s.

1105 Tetra Tech collects subsurface soil sample LC-05-SB at about 2 feet b/s. The soil is a light grey sandy soil.

LC-09-6W GPS LOCATION

LAT 32° 01' 20.817" N LONG 81° 02' 51.863" W

LC-05-SS/SB GPS LOCATION

LAT 32° 01' 17.854" N LONG 81° 02' 39.814" W

1200 Tetra Tech @ location of sample # LC-06-SS/SB in the area reportedly used for sand blasting - in the south yard. The samples will be collected in a small area ~~at~~ devoid of vegetation. There is

Sandra Hanger

Monday April 2, 2001

Field Logbook No. \_\_\_\_\_

Date \_\_\_\_\_

a fence along Williamson Creek. There are large containers stacked in this area, also, large pieces of metal. A blue tarp is covering a pile of black material. Some of this same sandy looking black material is in the location where LC-06-SS/SB will be collected.

1205 Tetra Tech collects sample LC-06-SS. The sample will be collected at 0-6 ins. b/s. The soil is a grey sandy soil with the black grit mixed w/ the soil. There are small rocks in the sample hole.

1205 Tetra Tech collects subsurface soil sample LC-06-SB. The soil is a dark brown sand with pebbles in it. There appears to be a large rock in the soil - causing auger refusal. A second soil boring is dug about 1 foot over - to the east ~~(SB)~~ closer to the shed. There are small rocks in the soil.

Sandra Hanger

14 Monday April 2, 2001

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Date \_\_\_\_\_

to stand over night. The well will be purged and sampled tomorrow April 3, 2001.

1640 Tetra Tech Secures temp. well and will return tomorrow.

1645 Tetra Tech @ Sample location LC-07-SS/SB. The samples will be collected on the side of Bldg. 203 between the edge of the road and the fence along Williamson Creek. The surface soil sample will be collected at 0-6 ins b/s. The soil is a fine brown sand.

Late entry 1655 - Subsurface soil sample LC-06-SB was collected @ 2 feet b/s.

Sample LC-07-SB was collected at 1645 @ 0-6 inches b/s.

1705 Tetra Tech collects sample LC-07-SB from the same location as LC-07-SS. The sample was collected at 2.5 feet b/s. Samples LC-07-SS/SB are collected from the Palmer Johnson property inside the Sandia. Gary

Monday April 2, 2001

15

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fence line - This area is near the confluence of ~~the~~ <sup>the</sup> Williamson Creek with the Wilmington River.

Photo - sample locations LC-07-SS/SB facing south towards Williamson Creek. The soil for LC-07-SB is a light Brown Sandy soil.

All onsite sampling activities are completed for 4/2/01.

~~Sampling - Gary~~  
4/2/01

The water is still light grey - with an oily sheen on it. The turbidity has decreased to 19; therefore, the well will be sampled - Due to the location of the well with the black grit in the soil, <sup>6th</sup> and the petroleum odor in the soil, and the oily sheen on the water. This is the area reportedly used for sand blasting. Immediately adjacent to the well location is a dull red metal container with the same kind of black grit inside it.

1035 Tetra Tech collects groundwater sample LC-06-GW.

1115 Sampling of LC-06-GW is complete.

1125 Tetra Tech is at the location of sample LC-04-GW near the entrance to Building 203. This is the tallest building on site. Ship repair/painting occurs in this building. The monitoring well is about 35-40 feet from samples LC-07-SS/SB.

Sandra J. Hansen

1130 Tetra Tech opens the manhole cover of LC-04-GW. There is no well cap/cover or pop up valve on the well. The well is constructed of 4-inch PVC. The 4-inch opening-casing is open - not secured except for the manhole cover which was bolted down. Tetra Tech will use the water level indicator to determine the depth of the well & depth to water. This well is flush to the asphalt pavement of the road.

Depth to water 5.5

Depth to bottom of well 12.7'

Water column  $7.2' \times 0.653 = 4.7 \times 3$   
= 14.1 purge volume.

1150 purging begins @ well NO LC-04-GW. The water has a slight brown color.

- Abort test

Sandra J. Hansen

Sandra J. Hansen

Tuesday April 3, 2001

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1204 about 9 gallons have been purged from monitoring well (permanent) No. LC-04-GW. The well is being allowed to recharge before the total purge ~~to~~ volume is removed.

1207 About 25 feet from the monitoring well where sample LC-04-GW is located, there is a square manhole - at the edge of the road. A small wooden bench is located at the fence line ~~2~~ next to this manhole. There is a discharge pipe (rusty & broken) on the other side of the fence. This discharge pipe leads to ~~the~~ empties into Williamson Creek. There is grey sediment that appears wet along the creek bank. However the pipe looks dry inside. A piece of concrete (possibly a culvert) is located about 10 feet from the pipe. There is debris along the outer part of the fence line along the creek bank - tires, Tyvek, glass boxes, concrete chunks.

Sandra Hanger -

Tuesday April 3, 2001

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wood, and paper, and gloves.

1215 Purging of well LC-04-GW stops. The well is dry. The well will be all allowed to recharge and Tetra Tech breaks for lunch.

Because the well went dry, it will be sampled <sup>immediately</sup> after lunch. The water quality readings will be taken first then the sample will be collected.

1225 Tetra Tech leaves the location of well No. LC-04-GW.

338 Tetra Tech @ location of well No. LC-04-GW and will ~~begin~~ begin the water quality readings. The well does not appear to have recharged sufficiently for sampling.

Volume	pH	Cond	Turb	Temp
12 gals.	7.48	2.01	6	19.7
12 gals.	7.48	2.04	4.5	19.5
	7.42	2.02	5	19.6
	7.43	2.02	4.4	19.6
	7.45	2.03	4.3	19.6

The water is clear. The well was

Tuesday April 3, 2001.

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allowed to recharge for about 1 hour. Therefore, the sample will be collected. 1401 Tetra Tech collects groundwater sample LC-04-GW.

1415 Sampling of well LC-04-GW is complete. The manhole cover is replaced and bolted. This well had no cap on it. Coordinates are:

LC-04-GW lat.  $32^{\circ} 01' 19.175''$  N

long.  $81^{\circ} 02' 46.153''$  W

Coordinates of SS/SB samples collected earlier this morning.

1438 LC-08-SS/SB:

Lat  $32^{\circ} 01' 24.973''$  N

Long  $81^{\circ} 02' 46.087''$  W

LC-04-SS/SB:

Lat  $32^{\circ} 01' 17.871''$  N

Long  $81^{\circ} 02' 46.368''$  W

While collecting the GPS coordinates for samples LC-08-SS/SB, Palmer Johnson were observing activities on the Wilmington River. Some personnel indicated that the Palmer Johnson personnel were looking at dolphins or porpoises on the Wilmington River.

Sandra Harper

Tuesday April 3, 2001

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Date \_\_\_\_\_

1500 Tetra Tech at location of sample LC-03-GW - same location as sample LC-02-SS/SB between the River's End Restaurant and the Gift Shop / Palmer Johnson Brokerage office.

1515 Tetra Tech begins to auger at LC-03-GW. There are small rocks & shells in the soil which were also

encountered during sampling of LC-02-SS/SB. Auger refusal at 4 feet B/S. We will move to a ~~new~~ second hole. (SD)

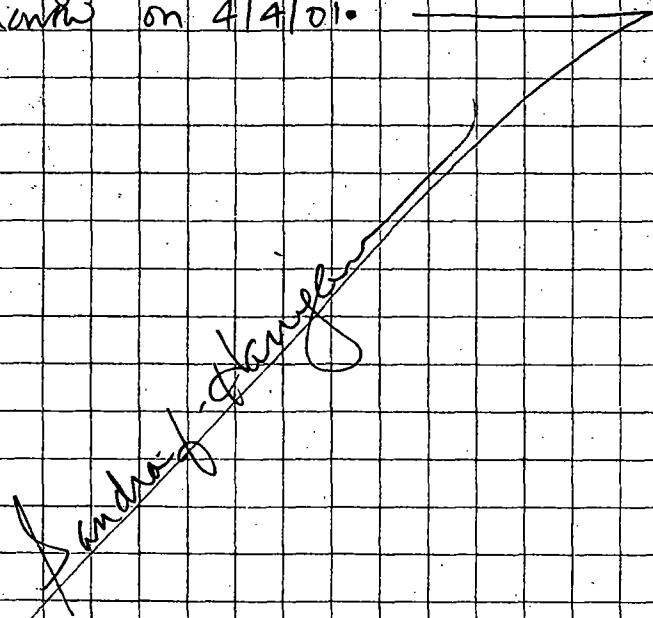
1550 auger refusal at the ~~second~~ second hole. a 3rd hole is being augered. Auger refusal @ ~~3.5~~ 4 feet B/S. A fourth hole is being dug near the gift shop. The hole is being dug in a grassy area. The gas lines are marked between 15 & 25 feet around this area. A bench is located at the edge of the sidewalk. The bench is about 1/2 foot away from the sample location.

Tuesday April 3, 2001

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the site behind the gift Shop & Thunderbolt Marine Inc. office. There is a sign on the other side of the fence - neighboring property that says Verona Ave 4300 & (NE) Arapahoe Av. 2900 (SE). The hole was advanced to about 4 feet. The hole will be secured and sampling activities will be conducted tomorrow on 4/4/01.



Wednesday April 4, 2001

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Date

0805 Tetra Tech onsite. The weather is partly cloudy. The temperature is about 60°F. 0900 Tetra Tech begins to check the well depth of LC-03. Gm

0905 Total well depth 10-0' depth to water is 6-7'

water column is 3-3'

$$3.3 \times 0.163 = 0.5379$$

$$0.54 \times 3 = 1.62 \text{ purge volume.}$$

The well is being purged - ~~fast~~ <sup>slow</sup>

The water is dark grey.

0915 About 1.5 gallons have been purged - and the water has cleared up a lot - light grey.

volume	pH	Cond	Turb	Temp
1.5 gals	7.35	3.18	20	17.2
1.8 gals	7.31	3.03	114	17.5
2 gals	7.27	2.74	20	18.1
2.2 gals	7.63	2.74	21	19.2
2.2	7.33	2.65	22	19.2

The water has a petroleum odor - and is still cloudy.

0913 Tetra Tech will use a peristaltic pump to continue

Sandra Hemgar

pump - bailer

Wednesday April 4, 2001.

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Date \_\_\_\_\_

Mr. Brooks stepped by the location of well LC-03-GW. He observed and examined the sand (mixed with diesel / petroleum) that was removed from the borehole. He also examined the purge water - a small amount fell on the plastic near the purge bucket. Mr. Brooks indicated that "that's some nasty stuff" coming from the well.

000 The well is being allowed to recharge.

1010 The water quality readings resume and are recorded on the previous page in the table.

Volume	pH	Cond.	Turb	Temp.
10:30 3.5	7.76	2.48	21	21.3
10:30 3.1	7.86	2.39	20	21.0
11:05 3.8	6.97	2.55	10.5*	19.6
11:25 3.9	7.13	2.53	8.34	19.1
11:50 4.0	7.47	2.33	7.48	20.3
* Turbidity with new Turbidity meter				

11:15 Pumping & water quality readings continue. The water is clear.

11:30 The water quality readings have stabilized.

Wednesday April 4, 2001

Field Logbook No. \_\_\_\_\_

Date \_\_\_\_\_

The well is recharging - then it will be sampled. The turbidity meter was replaced with a new one, then the readings stabilized. The pH, Temp & conductivity were taken using a Hana & the turbidity using a turbidity meter.

210 Tetra Tech begins to collect the VOA's for sample LC-03-GW

1200 A vacuum is established using the vacuum caps. The first amber jug was filled to about 1/8 of a gallon then the well went dry again.

\* The GPS coordinates for LC-03-GW are

lat: 32° 01' 29.307" N

long: 81° 02' 52.104" W

12:15 Tetra Tech personnel observed dolphins in the Wilmington River. Also, there is a pelican eating fish in this area between the River's End Restaurant & the Gift Shop.

The well LC-03-GW is still being sampled. The extractables are being collected. The well goes dry very often, then takes a few minutes

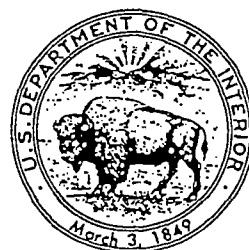
# Hydrology of the Floridan Aquifer System in Southeast Georgia and Adjacent Parts of Florida and South Carolina

By RICHARD E. KRAUSE *and* ROBERT B. RANDOLPH

REGIONAL AQUIFER-SYSTEM ANALYSIS—FLORIDAN AQUIFER SYSTEM

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U. S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1403 - D



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## CONVERSION FACTORS

Factors for converting inch-pound units to the International System (SI) of units are given below:

<i>Multiply</i>	<i>By</i>	<i>To obtain</i>
<i>Length</i>		
inch (in)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
<i>Area</i>		
square mile (mi <sup>2</sup> )	2.590	square kilometer (km <sup>2</sup> )
<i>Volume</i>		
gallon (gal)	3.785	liter (L)
	$3.785 \times 10^{-3}$	cubic meter (m <sup>3</sup> )
<i>Flow</i>		
gallon per minute (gal/min)	0.06309	liter per second (L/s)
	$6.309 \times 10^{-3}$	cubic meter per second (m <sup>3</sup> /s)
million gallons per day (Mgal/d)	0.04381	cubic meter per second (m <sup>3</sup> /s)
inch per year (in/yr)	25.4	millimeter per year (mm/yr)
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^{-2}$	cubic meter per second (m <sup>3</sup> /s)
<i>Transmissivity</i>		
foot squared per day (ft <sup>2</sup> /d)	0.09290	meter squared per day (m <sup>2</sup> /d)
<i>Hydraulic conductivity</i>		
foot per day (ft/d)	0.3048	meter per day (m/d)
<i>Leakance</i>		
gallon per day per cubic foot [(gal/d)/ft <sup>3</sup> ]	0.1337	meter per day per meter [(m/d)/m]
foot per day per foot [(ft/d)/ft] (or in reduced form, day <sup>-1</sup> )	1.000	meter per day per meter [(m/d)/m]
<i>Gradient</i>		
foot per mile (ft/mi)	0.1894	meter per kilometer (m/km)
<i>Drawdown</i>		
foot per year (ft/yr)	0.3048	meter per year (m/yr)

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Mean Sea Level of 1929."

and Tarver (1963), Leve (1966) and Snell and Anderson (1970) in the northeast Florida area. Paull and Dillon (1979) provide a description of the geology and hydrogeology of the offshore area, the Florida-Hatteras Shelf and Slope, and the Inner Blake Plateau.

Inland from the coastal area, almost no hydrogeologic investigations have been conducted and data are lacking. One exception was an investigation by Krause (1979) of the hydrogeology of the area of Valdosta, Ga., on the western limit of this study.

Callahan (1964), using existing data, included most of the study area in a report on the Coastal Plain aquifers in Georgia and parts of northeast Florida and southern South Carolina. Stringfield (1966) is the most comprehensive reference on the water from Tertiary limestone in the Southeastern States.

Only in two areas has the ground-water-flow system been studied by using computer simulations. The studies were in Georgia, in the areas of Brunswick (Krause and Counts, 1975) and Savannah (Counts and Krause, 1976; Randolph and Krause, 1984). The simulation models, although only two-dimensional in scope, serve as management tools for evaluating declines in the water level and deterioration of water quality due to heavy pumping.

The regional aquifer-system study of the Floridan aquifer system has generated several reports in addition to those in this Professional Paper series. These reports, all covering the Floridan aquifer system on a regional scale, describe the hydrogeologic framework of the aquifer system (Miller, 1982a, b, c, d, e); the geochemistry and ground-water quality (Sprinkle, 1982a, b, c, d); the estimated potentiometric surface prior to development (Johnston and others, 1980); and the potentiometric surface for present-day (May 1980) conditions (Johnston and others, 1981).

Results of test drilling and aquifer testing conducted during this investigation have been reported. Included are (1) results of hydrologic testing in an abandoned oil exploratory hole on the Atlantic Outer Continental Shelf (Johnston and others, 1982), (2) geologic and hydrologic data from a test-monitor well at Fernandina Beach, Fla. (Brown, 1980), (3) geologic and hydrologic results of test drilling and aquifer testing near Waycross, Ga. (Matthews and Krause, 1984), and (4) geologic and hydrologic data gathered from test drilling at Jacksonville Beach, Fla. (Brown and others, 1984).

The predevelopment flow system in the study area was described by Krause (1982) as part of this study. The report documents the initial phase of this study: model design, calibration, and results of computer simulation of the aquifer flow system prior to development. Because the report was preliminary in scope, conceptualization of the aquifer system was more general than that

reported herein. In effect, the preliminary report describes a working conceptual model and consequent simulation of the predevelopment flow system in the Floridan. However, simulation of the present-day (1980) flow system under stressed conditions brought about a somewhat different conceptual model of that flow system.

## GEOGRAPHIC AND TOPOGRAPHIC SETTING

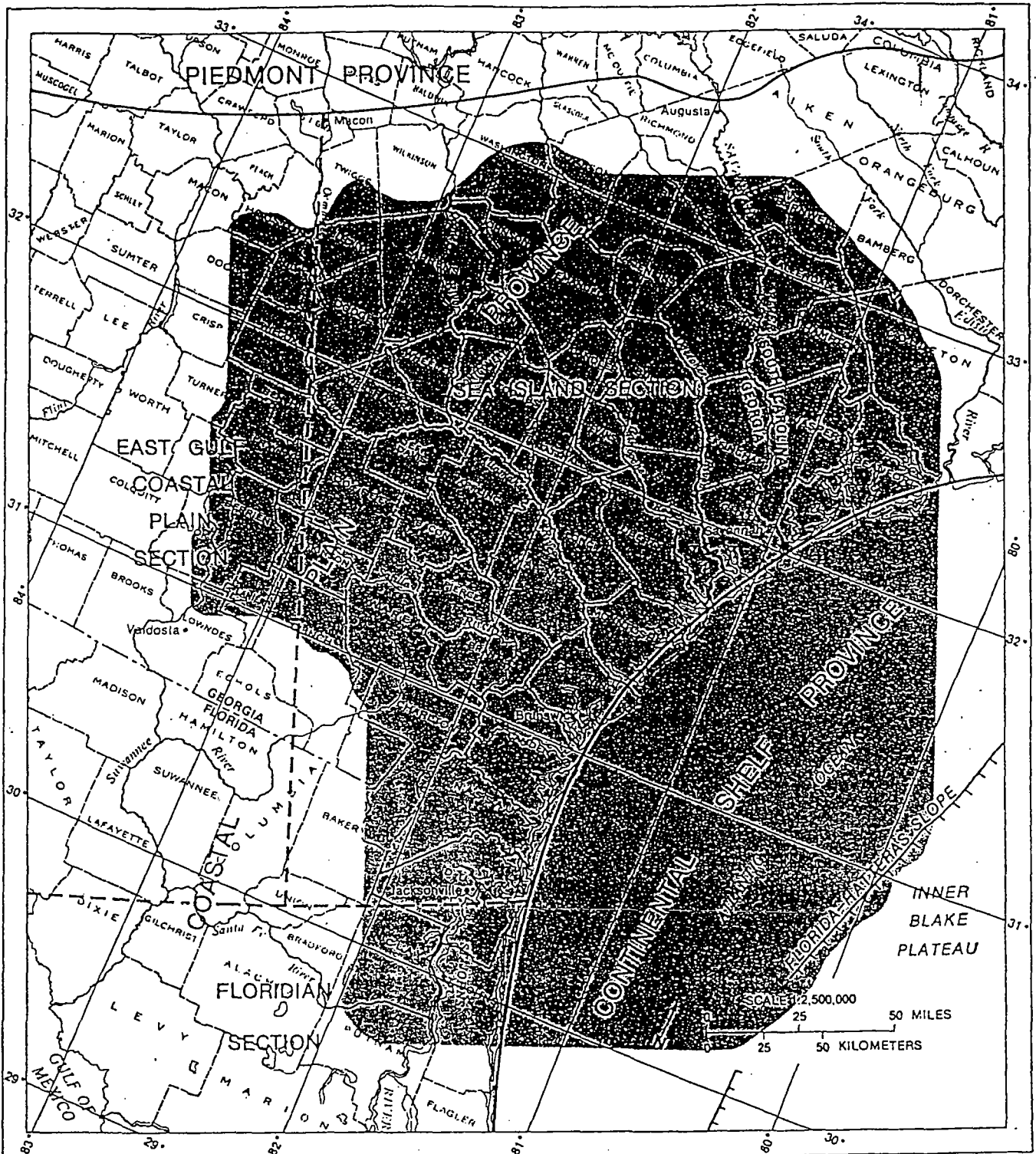
The study area lies entirely within the Coastal Plain and Continental Shelf provinces of the Atlantic Plain (Fenneman, 1938, pl. 3). The onshore Coastal Plain province accounts for about 20,000 mi<sup>2</sup> of the study area and the offshore Continental Shelf province, about 10,000 mi<sup>2</sup>. Of the Coastal Plain province, about 75 percent of the area is within the Sea Island section, 16 percent within the East Gulf Coastal Plain section, and 9 percent within the Floridan section (fig. 2).

The topographic divisions shown in figure 3 are chiefly those of Cooke (in LaForge and others, 1925, p. 17, for Georgia; Cooke, 1936, p. 3, for South Carolina; and Cooke, 1939, p. 14, for Florida). Stringfield (1966, fig. 2) modified the divisions somewhat to conform along State lines.

The Coastal Lowlands range in altitude from sea level to about 100 ft. The region typically consists of barrier islands, marshes, level plains, and a series of five terraces resulting from the most recent advances and retreats of the sea during the late Pleistocene, which left shorelines and sea floors along the Coastal Lowlands.

The Central Highlands of Florida include all of north-central Florida inland of the Coastal Lowlands and range in altitude from about 40 to 250 ft in the study area. The Central Highlands area includes lakes, swampy plains, terraces, ridges, and hills. The central part of the Central Highlands is marked by karst topography—characterized by numerous sinks, sinkhole lakes, sinking streams, and springs—that extends into the Valdosta area of south Georgia. The karst topography in this area is a result of uplifting of the carbonate rocks during post-Oligocene time which locally exposed the rocks and facilitated erosion of the overburden (Stringfield, 1966, p. 73). This part of the study area, because of its karst features, is one of the most hydrologically dynamic areas, having large quantities of recharge through swallow holes, sinkholes, and sinkhole lakes, and discharge from springs.

The Coastal Terraces of Georgia and South Carolina range in altitude from about 100 to 270 ft. The area's topography is chiefly an inland continuation of the terraces deposited along the Coastal Lowlands and is represented by similar shorelines and sea bottoms left by early Pleistocene advances and retreats of the sea.



Base from U.S.  
National Atlas, 1970

## EXPLANATION


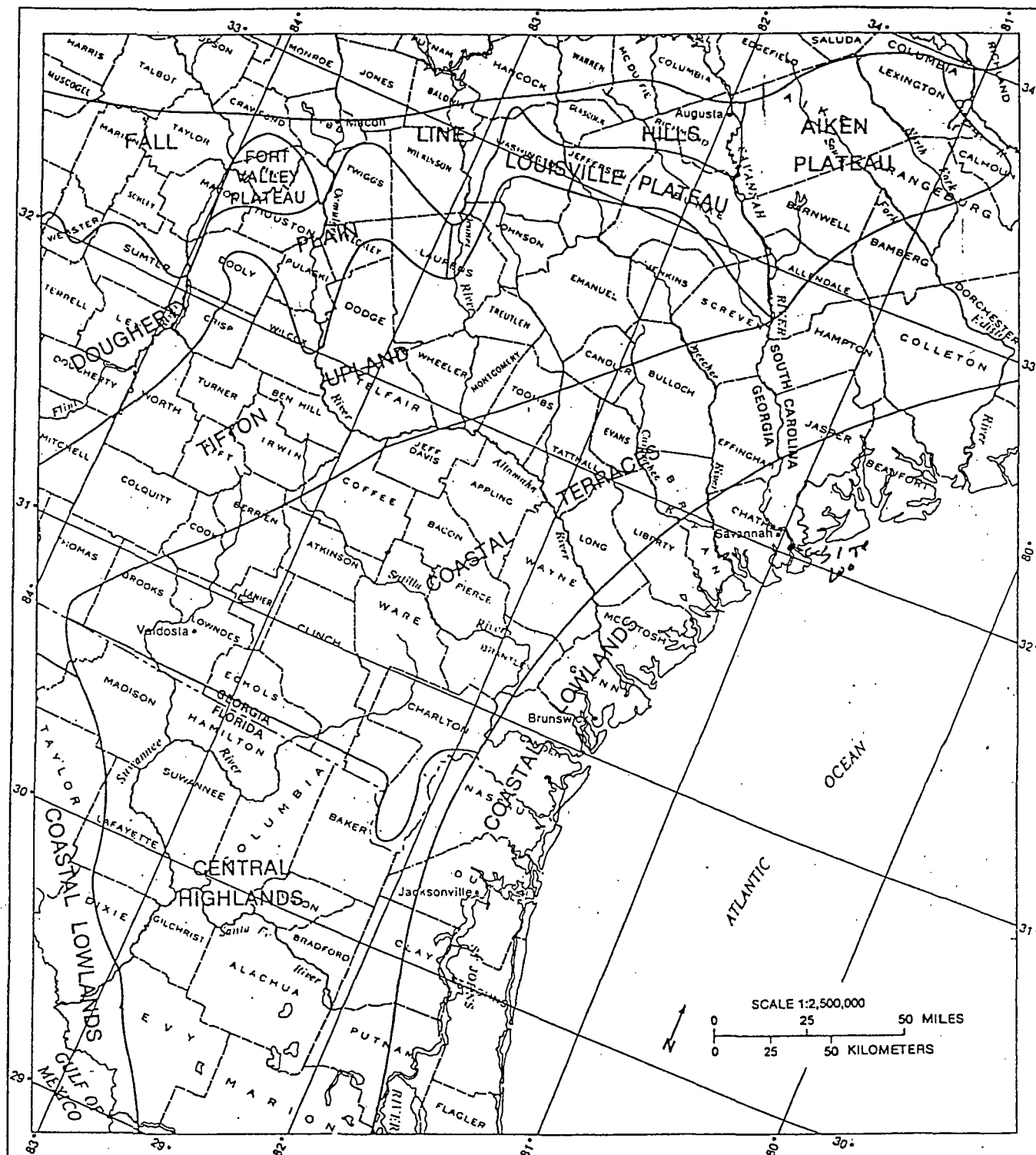
- Province boundary
- - - Section boundary
-  Study area

FIGURE 2.—Location of study area and physiographic subdivisions. From Fenneman (1938).



Base from U.S.  
National Atlas, 1970

FIGURE 3.—Generalized topographic divisions of the Coastal Plain province. From LaForge and others (1925), Cooke (1936; 1939), and Stringfield (1966).

calcareous clastic rocks of late Eocene age make up the top of the aquifer system (pl. 2). Here, the rocks consist of fossiliferous, argillaceous, glauconitic, calcareous clay and are part of the Barnwell Formation. Hydraulically, these beds, which are clastic facies of downdip carbonate rocks, do not represent a significant, corresponding change in permeability. Instead, these permeable clastic beds are hydraulically connected with the downdip carbonate rocks of the Upper Floridan aquifer.

In the extreme northeast part of the study area in South Carolina, the lower part of the Santee Limestone of middle Eocene age forms the top of the aquifer system (pl. 2). The Lower Floridan constitutes the permeable part of the aquifer system here.

#### BASE OF THE AQUIFER SYSTEM

In general, the base of the aquifer system is youngest in the updip part of the study area and is successively older downdip. The base of the aquifer system is oldest in the area of Brunswick, Ga., where it consists of evaporite beds and low-permeability dolomite of Late Cretaceous age. The altitude, configuration, and stratigraphy of the base of the aquifer system, chiefly as defined by Miller (1985), are shown on plate 3. In places, the base of the flow system differs slightly from the hydrogeologic base of the aquifer system as defined by Miller (1985). The predominantly clastic units, which lie both updip and below the predominantly carbonate rocks, are not a part of the Floridan aquifer system as defined by Miller (1985). They are hydraulically connected with the aquifer system, however, and thus were simulated during this study.

Rocks primarily of late Eocene age form the base of the aquifer system in the area downdip from the Gulf Trough in the western part of the study area (pl. 3). There, deposition of secondary gypsum has filled most of the pore space in the lower part of the Ocala Limestone and locally in the upper part of the Avon Park Formation. The Ocala is normally a highly permeable rock unit, and is the most productive of any of the formations in the Floridan aquifer system in the study area. Owing to the gypsum mineralization and the general lack of high secondary permeability, the lower part of the Ocala is a low-permeability unit to the southeast of the western part of the Gulf Trough within the study area. In that part of the area, the Ocala grades downward into low-permeability clastic rocks of the Lisbon Formation, and no Lower Floridan aquifer is present.

The base of the aquifer system near its updip limit in the northwestern part of the study area (pl. 3) is composed of fine-grained, calcareous, glauconitic sand interbedded with clay and argillaceous sand. These strata are part of the Lisbon Formation of middle Eocene age. Still

farther downdip, the thickness of permeable material in the aquifer system increases and its base becomes progressively lower toward the southeast with respect to altitude and stratigraphic position. In a narrow northeast-trending strip across the central Georgia Coastal Plain, clastic rocks of the Lisbon Formation have graded by facies change into permeable limestone, which continues downdip. The base of the aquifer system in this transition zone consists of fine-grained, highly glauconitic sand, argillaceous sand, and clay, all of which are part of the Tallahatta Formation (pl. 3).

In the area along the Savannah River in Georgia and South Carolina (pl. 3), the base of the aquifer system is composed of highly sandy, calcareous clay interbedded with soft, sandy, argillaceous limestone and fine, calcareous sand. These rocks are time-equivalent to the Santee Limestone of South Carolina. Both the updip Lisbon and the downdip Tallahatta grade laterally into the Santee equivalent by facies change.

In these aforementioned areas where the base of the aquifer system is composed of middle Eocene rocks, permeable clastic units lying below the predominantly carbonate rocks are not a part of the aquifer system of Miller (1985) and are thus not shown on plate 3. They are, however, hydraulically connected with the downdip and the overlying carbonate facies of the Lower Floridan. Where such sands are present, the base of the Floridan aquifer system, for purposes of this study, lies within the Huber Formation in updip areas, and within either the Gosport equivalent, the Lisbon Formation, or the Tallahatta Formation in downdip areas.

Clastic rocks of early Eocene age form the base of the aquifer system in east-central coastal Georgia. These low-permeability rocks consist of silty, highly glauconitic, micaceous fine sand interbedded with lignitic clay. They are undifferentiated at present, but they are stratigraphic equivalents of the Tusahoma and Nanafalia Formations of western Georgia and eastern Alabama. In the northern part of this area, permeable, clastic material of early Eocene age is hydraulically connected with the carbonate facies of the Lower Floridan.

The base of the aquifer system in south-central Georgia and adjacent counties in north Florida is represented by chalky, glauconitic, gypsiferous limestone and dolomite that are part of the Oldsmar Formation. Part of the Oldsmar grades northward and westward into equivalents of the Tusahoma and Nanafalia Formations.

The Cedar Keys Formation of Paleocene age constitutes the base of the aquifer system in northeast Florida and extreme southeast Georgia. Rocks of the Cedar Keys Formation are dolomitic limestone and dolomite, having regionally extensive interbedded anhydrite layers that mark the base of the system. In

aquifers and confining units are shown on plates 4 and 5 and described below.

#### SURFICIAL AQUIFER

In most of the area where the Floridan aquifer system is confined, a surficial aquifer overlies the upper confining unit. The surficial aquifer consists of post-Miocene age, unconsolidated fine to very coarse, well-sorted sand, at depth commonly phosphatic and calcareous. In some areas, grain size is as large as fine gravel. Interbedded with these beds are layers of poorly sorted sand, clayey silt and sand, and, at depth, argillaceous limestone. In the extreme updip part of the study area, the upper confining unit is absent and the calcareous, clastic facies of the Floridan are largely unconfined. In this area, the Upper Floridan is under water-table conditions and supplies the surficial aquifer.

Water in the surficial aquifer is unconfined or under water-table conditions. The configuration of the water table is generally a subdued replica of the land surface. The water table is near land surface in low-lying areas, along streams, in marshes and swamps, and generally in areas along the coast. The water table also is near land surface in areas where the aquifer contains beds of low-permeability material. Generally, the water table is lower beneath topographic highs in areas of moderate to comparatively high relief. It is also lower where thick deposits of permeable material are present, such as along the Pleistocene shoreline ridges paralleling the coast. Relatively steep gradients in the water table adjoin the major stream courses, and relatively gentle gradients exist in the broad interstream areas.

In some areas where the clastic material overlying the Floridan aquifer system is thick, such as in the Southeast Georgia embayment, additional, partially confined permeable zones of clastic material are present within the upper confining unit and between the surficial aquifer and the Upper Floridan. Heads in these water-bearing zones may be higher or lower than heads in the surficial aquifer, depending on the degree of confinement, proximity of aquifers, withdrawal of water from the aquifers, and head gradient between the surficial aquifer and the Upper Floridan aquifer.

Precipitation infiltrates the surficial aquifer and moves down to the water table, providing the prime source of recharge to the aquifer. Water moves laterally downgradient and discharges into streams, ponds, and other surface-water bodies. Some water is lost to evaporation and transpiration, and some leaks downward into the Upper Floridan. The water level in the surficial aquifer responds rapidly to rainfall and shows seasonal variations corresponding to similar variations in rainfall and evapotranspiration. Seasonal fluctuations

in the water level may be as great as 15 to 20 ft in areas of high topographic relief and where the aquifer is composed chiefly of coarse clastic, high-permeability material. Seasonal fluctuations are more commonly less than 10 ft in flat-lying areas and where low-permeability material is within, and especially near the top of, the surficial aquifer (fig. 7). Long-term climatic fluctuations in the water level in the surficial aquifer are probably negligible. Marked departures from normal precipitation (based on the period 1943–81) typically cause only a few feet of change in the water level (fig. 8).

The surficial aquifer functions as a source or sink to the underlying Floridan aquifer system, receiving water from or giving water to the Floridan. In areas where the water table in the surficial aquifer is above the potentiometric surface of the Floridan, the surficial aquifer recharges the Floridan by downward leakage through the upper confining unit. Where the head gradient between the surficial aquifer and the Floridan is in the opposite direction, the surficial aquifer receives upward leakage from the Floridan.

#### UPPER CONFINING UNIT

The upper confining unit consists primarily of the Hawthorn Formation of late and middle Miocene age, where present. It is composed of all strata between the surficial aquifer and the Upper Floridan aquifer, and thus includes not only clay of extremely low permeability but also, locally, sand beds of moderate permeability. In some areas, low-permeability beds of post-Miocene age are part of the upper confining unit. Over most of the study area, the unit is of middle Miocene age and consists of interbedded, locally highly phosphatic sand, silt, clay, and sandy clay beds of low permeability. The maximum thickness of the unit is about 600 ft in the Southeast Georgia embayment near Brunswick, Ga. (pl. 4).

The upper confining unit overlies all of the Floridan aquifer system except in the extreme updip part of the study area and in small areas where the confining unit has been breached or removed by erosion (pl. 4). These areas are not completely delineated by the lines of thickness of the upper confining unit shown on plate 4 because of the low density of control-well data. The thickness of the confining unit in the area of Brooks and Lowndes Counties, Ga., shown on plate 4 has been depicted with somewhat greater detail on the basis of work by Krause (1979, pl. 1). In Lowndes County, within the channel of the Withlacoochee River, the confining unit has been stripped away (pl. 4). In addition, some of the deeper sinkholes in the areas of thin confinement in the area of Lowndes County, as well as in the area of Keystone Heights, Fla., probably also breach the confining unit.

area; however, the zone leaks water to the Upper Floridan where the Upper Floridan is heavily pumped.

The Lower Floridan in the area of Brunswick, Ga., consists of interbedded limestone and dolomite of the lower two-thirds of the middle Eocene, and the upper part of the lower Eocene. The Lower Floridan in this area includes the "brackish-water zone" and the "deep freshwater" described by Gregg and Zimmerman (1974, pl. 1). Neither of these zones is tapped by supply wells in the Brunswick area, but water from the zones leaks upward through faults or fractures in the middle semiconfining unit into the Upper Floridan. The middle semiconfining unit consists of dense, low-permeability, recrystallized limestone and dolomite near the top of the middle Eocene section.

In the area of Savannah, Ga., and Hilton Head Island, S.C., the Lower Floridan consists of dolomitic limestone of middle Eocene age. In the Savannah area, the Lower Floridan represents permeable zones 3, 4, and 5 described by McCollum and Counts (1964, p. D9), as determined from current-meter tests made in wells. The Lower Floridan is not tapped for water supply in the Savannah area. However, it responds to pumping from the Upper Floridan, as indicated by the similarity of water levels observed in the Upper and Lower Floridan aquifers (fig. 9). This suggests that the Lower Floridan is hydraulically connected with the Upper Floridan.

In the area of Hilton Head Island, S.C., the Lower Floridan is similar to that at Savannah, but individual permeable zones have not been reported. The Lower Floridan in this area is the "lower permeable zone" described by Hayes (1979) and Spigner and Ransom (1979), which is the Santee Limestone of the basal middle Eocene. The lower permeable zone consists of a siliceous, glauconitic limestone having secondary permeability. It is less than 100 ft thick in this area. In the extreme northeastern part of the study area in South Carolina, the Upper Floridan is not present (pls. 1, 5) and the Lower Floridan is the primary source of ground water. The middle semiconfining unit there is a soft, siliceous, argillaceous, marly limestone of low permeability that ranges in thickness from about 200 to 900 ft.

Downdip from the Gulf Trough in middle Georgia, the Lower Floridan consists chiefly of siliceous, argillaceous limestone of middle Eocene age. The Lower Floridan, as a permeable carbonate facies within the entire Floridan aquifer system, extends only to about the Gulf Trough. Updip from the Gulf Trough, the character of rocks stratigraphically equivalent to the downdip carbonate facies changes considerably. In the updip area, the aquifer grades northward from a carbonate facies along the trough to clastic facies along the updip extent of the aquifer system.

Updip from the Gulf Trough, the Lower Floridan, according to Miller's (1985) framework of the aquifer system, does not exist. In that area, Miller limited the Floridan aquifer system to strata that are more than 50 percent carbonate. Although the units in this area are predominantly noncarbonate and are designated by different formation names, they are the clastic equivalents of Miller's Lower Floridan, differing only in lithology. The units are hydraulically part of the Lower Floridan flow system and therefore are treated as part of the Lower Floridan in this study. The clastic units consist of calcareous silt and sand, fossiliferous, glauconitic, sandy limestone, and clean quartz sand and gravel having high porosity and permeability. The units are chiefly part of the Huber Formation (Buie, 1978), the exact age of which is unknown, which occurs between two recognizable unconformities—one at the end of the Cretaceous and one at the end of the middle Eocene.

The middle semiconfining unit overlying the Lower Floridan is made up of low-permeability clay, siltstone, and argillaceous limestone of the basal part of upper Eocene strata. The unit grades into the adjacent Upper and Lower Floridan, and in places has moderate permeability and effective vertical hydraulic conductivity, in effect providing little separation between the aquifers.

Little is known of the extent, thickness, and character of similar facies of the Lower Floridan and the middle semiconfining unit in the inland part of the study area. Few data are available for the Lower Floridan and middle semiconfining unit, as only a few wells tap the Lower Floridan, especially in this inland area. Sufficient water supplies are generally obtained from the Upper Floridan, making drilling into the Lower Floridan unnecessary. Some oil-test wells have been drilled through the Lower Floridan; however, only geologic and geophysical data were obtained.

#### FERNANDINA PERMEABLE ZONE

The Fernandina permeable zone of the Lower Floridan aquifer was first tapped in 1945 by a 2,130-ft test well at Fernandina Beach, Fla., and that name is used herein. The zone consists of pelletal, recrystallized limestone and finely crystallized dolomite that has extremely high permeability and is locally cavernous. In the areas of Fernandina Beach and Jacksonville, the zone is in the basal lower Eocene and Paleocene—the Oldsmar and Cedar Keys Formations, respectively. In the area of Brunswick, Ga., the zone is lower stratigraphically and lies at a greater depth in rocks of Paleocene and latest Cretaceous age. Thickness of the zone ranges from about 100 ft in the Jacksonville area to more than 500 ft at Brunswick. The zone's approximate extent is shown on plate 3. The offshore extent

TABLE 2

units, lithology, and hydrologic properties of Tertiary and Upper Cretaceous formations pertinent to the Floridan aquifer system in

WEST GEORGIA		SOUTHEAST GEORGIA		SOUTHERN SOUTH CAROLINA	
Hydrologic properties	Stratigraphic unit	Lithology	Hydrologic properties	Stratigraphic unit	Lithology
Moderate yields	Alluvium and terrace deposits	Chiefly sand, gravel, and clay, poorly sorted, partially indurated	Low yields. Potential source of moderate quantities of water where deposits are hydraulically connected to streams	Alluvium and terrace deposits	Chiefly sand, gravel, and clay, poorly sorted, partially indurated
Moderate yields	Citronelle equivalent	Chiefly sand, gravel, and clay	Moderate to large yields	Raysor Formation	Buff, sandy, friable shell marl and loose sand
	Charlton Formation and Raysor Formation	Fine sand interbedded with clay and marl which is in some places	Low yields		
Moderate amounts of nonartesian water. Hawthorn forms the main unit for the artesian water, but the lower part may be hydraulically connected to the Floridan aquifer	Hawthorn Formation	Marl, clay, sand, dolomite, interbedded with pale to dark-green phosphatic sandy clay and sandy dolomite	Low to moderate amounts of artesian and nonartesian water. Most of the Hawthorn forms the upper confining unit for the underlying artesian water, but the lower part may be hydraulically connected to the Upper Floridan aquifer	Hawthorn Formation	Phosphatic sandy clay to phosphatic clayey sand; sandy dolomitic limestone interbedded with layers of hard brittle clay resembling stratified fuller's earth
Moderate to large yields of water, but generally underlying Eocene. Uppermost unit of the aquifer system	Suwannee Limestone	Limestone ranging from soft, chalky, and fossiliferous to dense calcitized saccharoidal and unfossiliferous	Yields as much as 500 gal/min. The water is artesian except in outcrop areas. Large supply to wells in the Valdosta area. Uppermost unit of the Floridan aquifer system	Cooper Formation (upper part)	Yellowish, soft, chalky limestone to grayish-green to brown phosphatic, sandy, marl
Aquifer; yields as 0 gal/min from two water-bearing zones and base of the	Cooper Formation	Consists of grayish-green to brown phosphatic, sometimes sandy, marl in eastern Georgia	Insignificant yields	Cooper Formation (lower part)	Light gray to white, silty, sandy phosphatic, clayey limestone
	Ocala Limestone	White to gray, fossiliferous, recrystallized, porous, limestone containing large solution cavities. In the Valdosta, Georgia, area, lower part mineralized with gypsum and other evaporites, eliminating effective permeability	Extremely prolific water-bearing rock. Major part of the Floridan aquifer system. Yields as much as 13,000 gal/min from secondary-permeability solution cavities. Low-permeability, evaporite-mineralized limestone in the lower part of the formation acts as the lower confining unit of the Floridan aquifer system in the Valdosta, Ga., area		
Significant contributor to an aquifer system in Georgia. Yields large amounts in northeast are the dolomite and secondary permeability ties	Gosport equivalent	Calcareous sand or very sandy limestone, fossiliferous and glauconitic at depth	Lowest formation of the Floridan aquifer system where permeable (coastal area-east Georgia). Moderate yields	Santee Limestone	Pure white to creamy-yellow fossiliferous and partly glauconitic limestone containing numerous bryozoans
	Lisbon Formation	Marl, soft, sandy, clayey, glauconitic, and fossiliferous. Medium to coarse well-sorted sand in central and western part of the area	Low permeability. Acts as the lower confining unit of the Floridan aquifer system in the coastal area-east Georgia. Permeable sands are hydraulically connected to and are part of the lower Floridan flow system		
	Tallahatta Formation	Interbedded glauconitic sand and shale, grading to glauconitic argillaceous fossiliferous, sandy limestone	Thick beds of permeable sand are hydraulically part of the Floridan flow system. Beds of low permeability act as the base of the aquifer system		
Acts as a semiconfining basal part, which contains small amounts of water	Undifferentiated	Silt, massive clay, siltstone and mudstone	Extremely low permeability. Acts as lower confining unit of the Floridan aquifer in central part of the area	Fishburne Formation	Calcareous, glauconitic, sand and clay, and sandy, glauconitic fossiliferous limestone
Low permeability. Acts as lower confining unit of the Floridan aquifer system where permeable (Brunswick, Ga., area) is part of the Floridan aquifer. Confined water there				Black Mingo Formation	Red to brown sandy clay and partly indurated fine white to yellow sand, gray to black clay and laminated shale

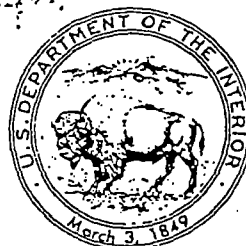
# Hydrogeologic Framework of the Floridan Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina

By JAMES A. MILLER

## REGIONAL AQUIFER-SYSTEM ANALYSIS

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U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1403-B



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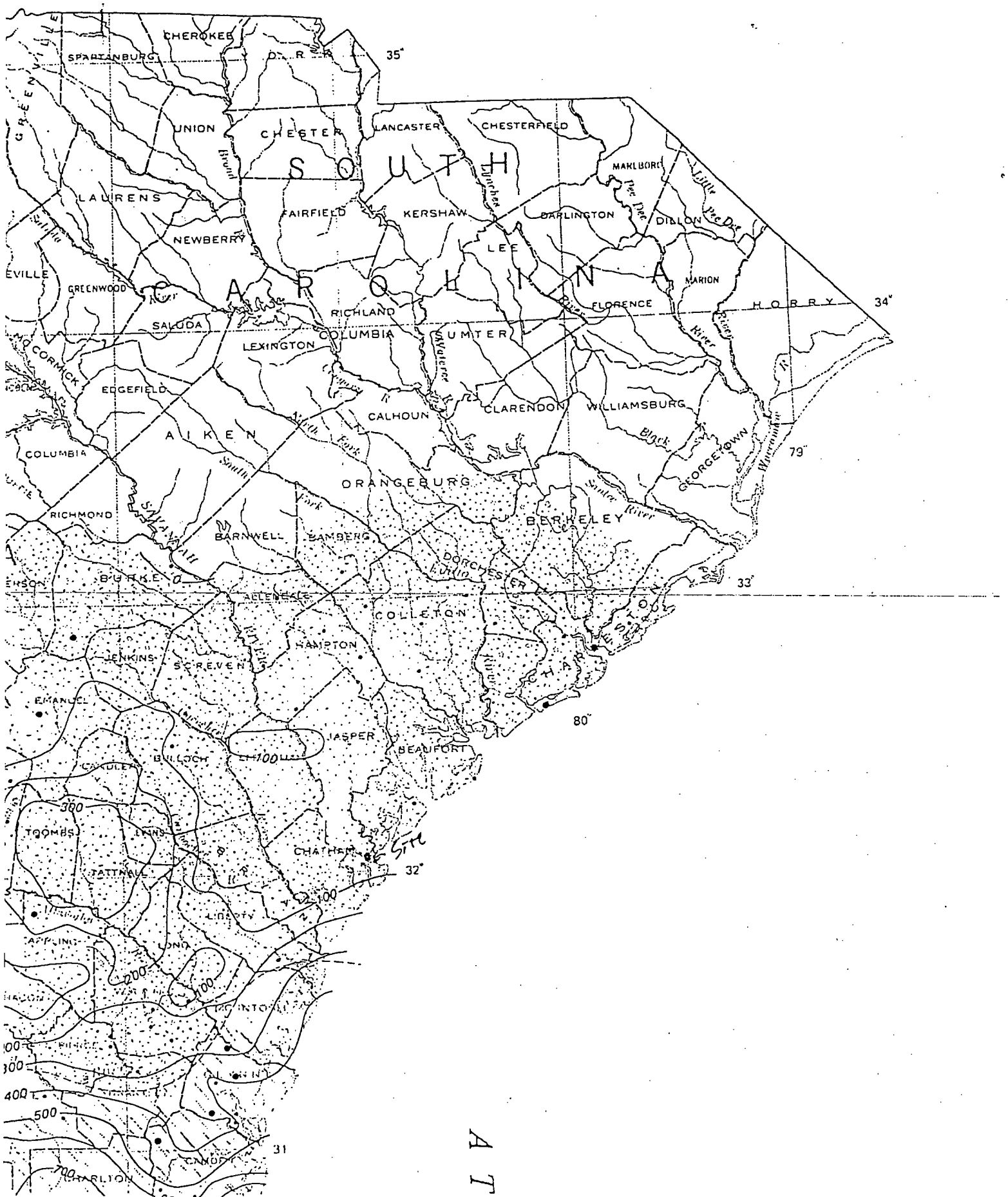
LOCATION (numbers refer to index map)  Chrono- stratigraphic Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Pensacola, Fla.	Fort Walton Beach, Fla.	Appalachicola Fla.	Albany, Ga.	Near Moultrie, Ga.	Near Valdosta, Ga.	Near Baxley, Ga.	Savannah, Ga.	Brunswick, Ga.	Jacksonville, Fla.	Fernandina Beach, Fla.	Near Lake City, Fla.	Near Gainesville, Fla.	Near Orlando, Fla.	Gulf Hammock, Fla.	St. Petersburg, Fla.	Sunniland, Fla.	West Palm Beach, Fla.	Key Largo, Fla.
POST-MIOCENE																			
LATE AND MIDDLE MIOCENE																			
EARLY MIOCENE																			
OLIGOCENE																			
LATE EOCENE																			
MIDDLE EOCENE																			
EARLY EOCENE																			
PALEOCENE																			
LATE CRETACEOUS																			

## EXPLANATION

	Surficial Aquifer (Includes Biscayne and Sand-and-Gravel Aquifers)		Middle Confining Unit (Numerals refer to descriptions in text)		Boulder Zone
	Upper Confining Unit of Floridan Aquifer System		Lower Floridan Aquifer		Lower Confining Unit of Floridan Aquifer System
	Upper Floridan Aquifer		Local to Sub-regional Confining Unit (Numerals refer to descriptions in text)		Absent

Figure 9. Relation of time-stratigraphic units to the Floridan aquifer system, its component aquifers, and its confining units.

PROFESSIONAL PAPER 1403-B  
PLATE 5





GULF

O

# EXPLANATION


—500— Line of equal thickness of rocks of early Eocene age. Interval 100 feet.

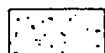
— — — Approximate updip limit of outcrop

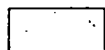
$\frac{U}{D}$  Fault—Vertical or nearly so

U Upthrown side

D Downthrown side

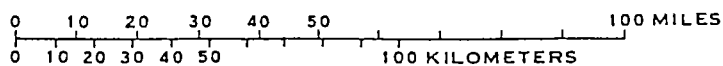
 Area of outcrop (or shallow subcrop)

 Area where strata of early Eocene age consist of clastic rocks

 Area where strata of early Eocene age consist of carbonate rocks

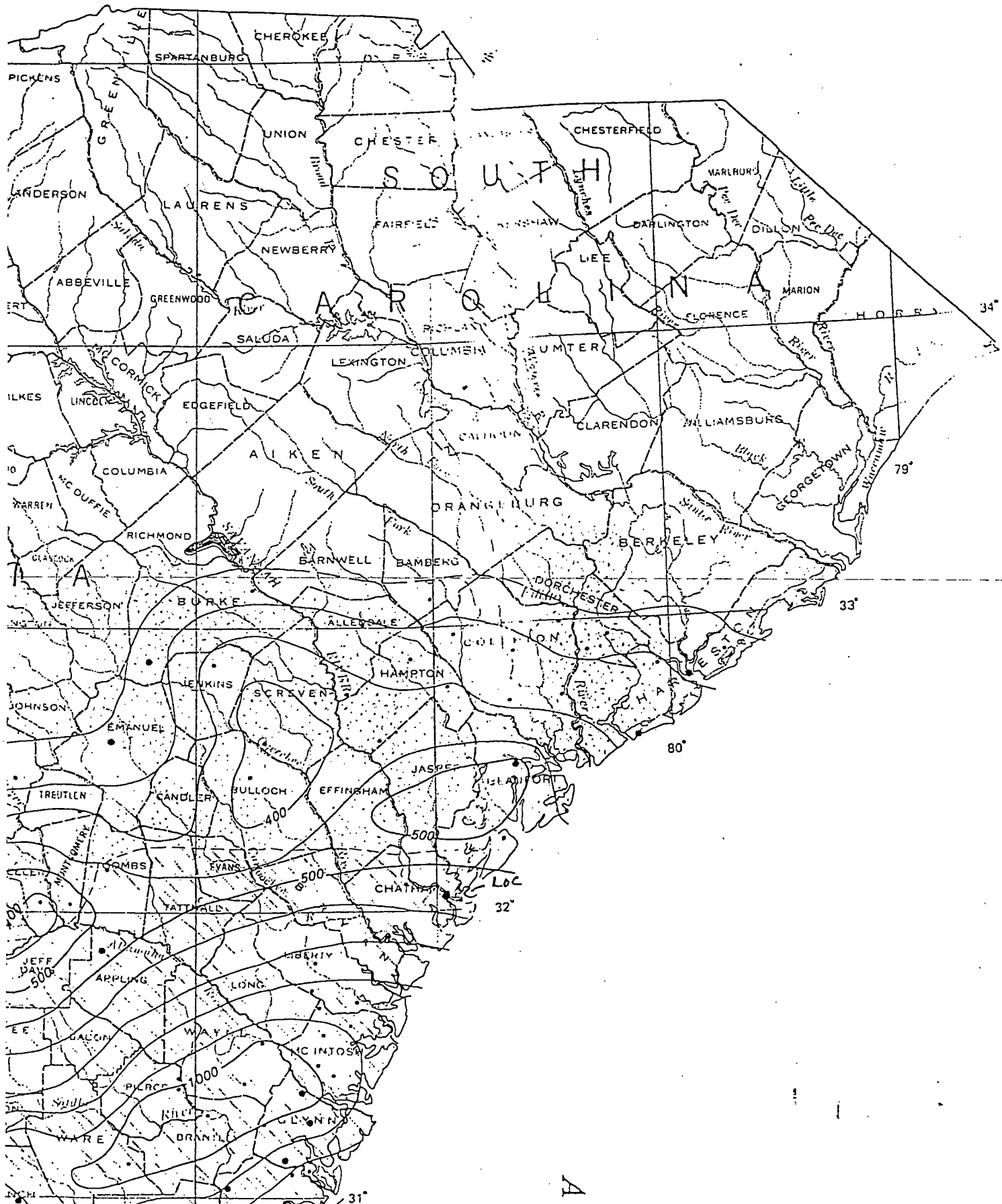
• Well control point

SCALE 1:2,000,000

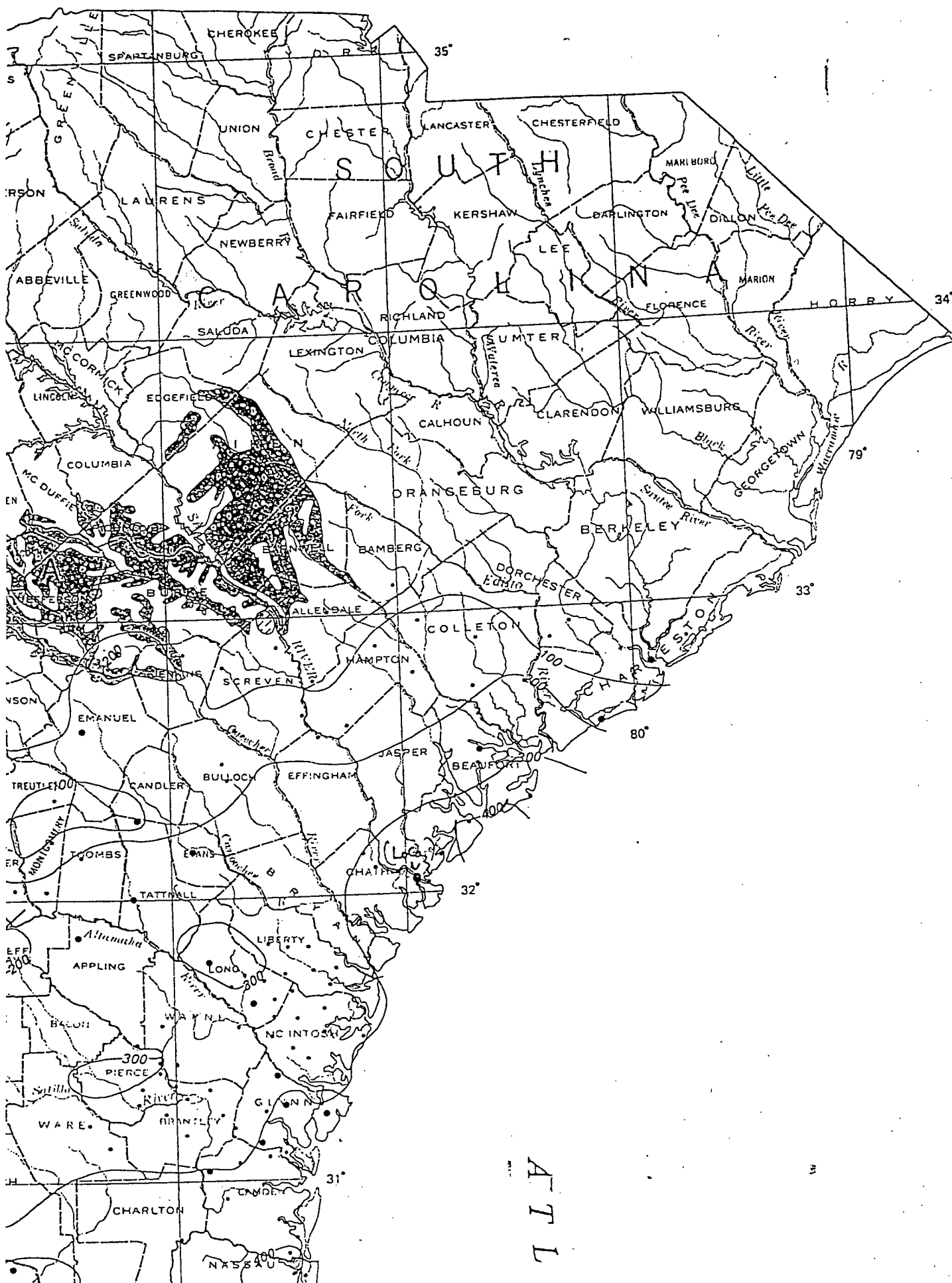


Ref. 2

PROFESSIONAL PAPER 1403-B  
PLATE 7







# EXPLANATION

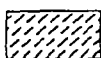
—300— Line of equal thickness of rocks of late Eocene age. Interval 100 feet.

----- Approximate updip limit of upper Eocene rocks

$\frac{U}{D}$  Fault—Vertical or nearly so

U Upthrown side

D Downthrown side



Area where rocks of late Eocene age are absent (older rocks exposed in outcrop or subcrop)

Area where outcrop or shallow subcrop of late Eocene age consists of:



Limestone



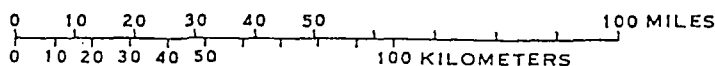
Mostly limestone residuum



Mostly clastic rocks

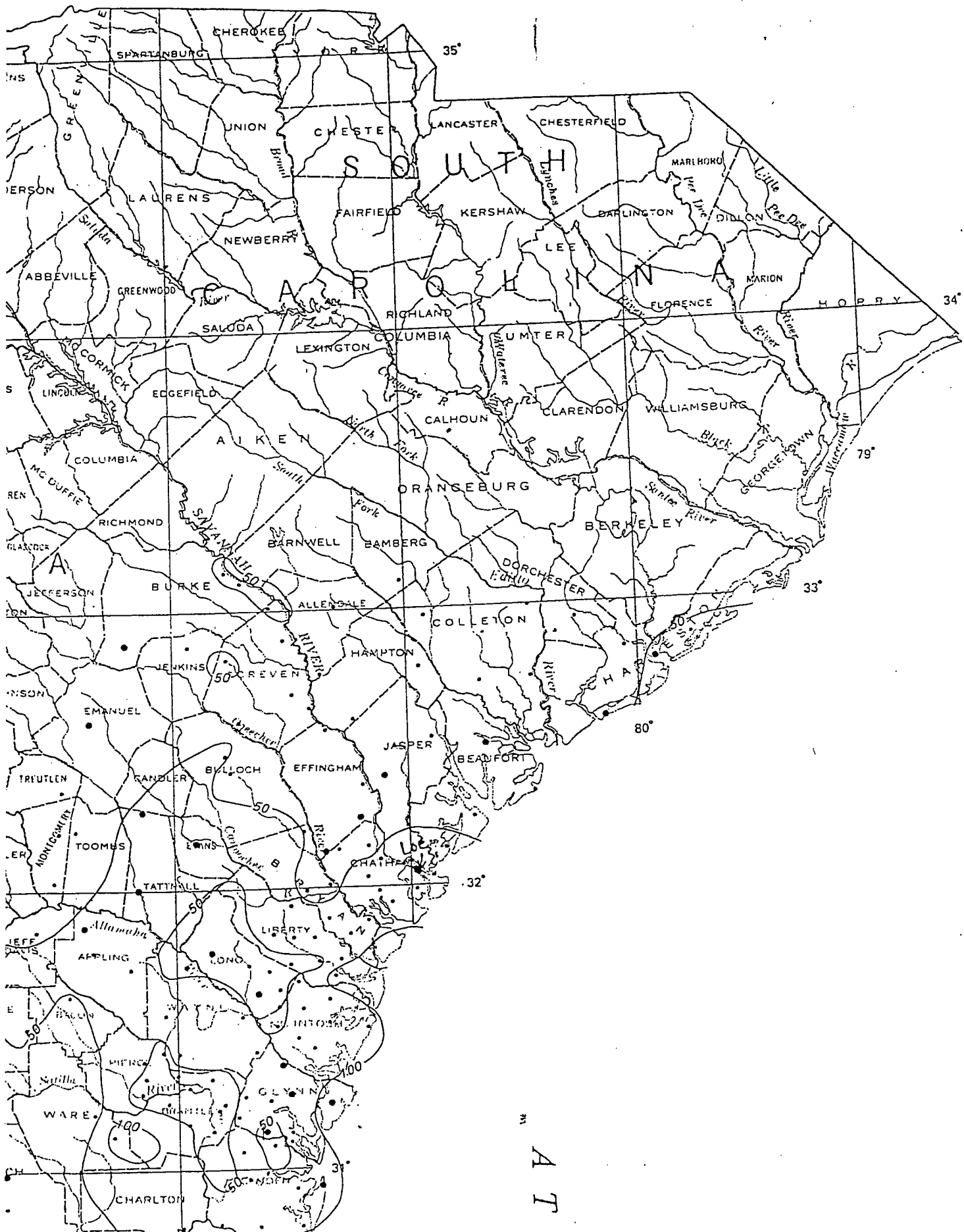
• Well control point

SCALE 1:2,000,000



Thickness and lithology of rocks of late Eocene age.

PROFESSIONAL PAPER 1403-B  
PLATE 14




# EXPLANATION

—500— Line of equal thickness of post-Miocene rocks. Interval 50 feet.

$\frac{U}{D}$  Fault—Vertical or nearly so

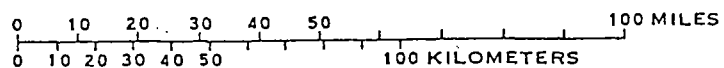
U Upthrown side

D Downthrown side

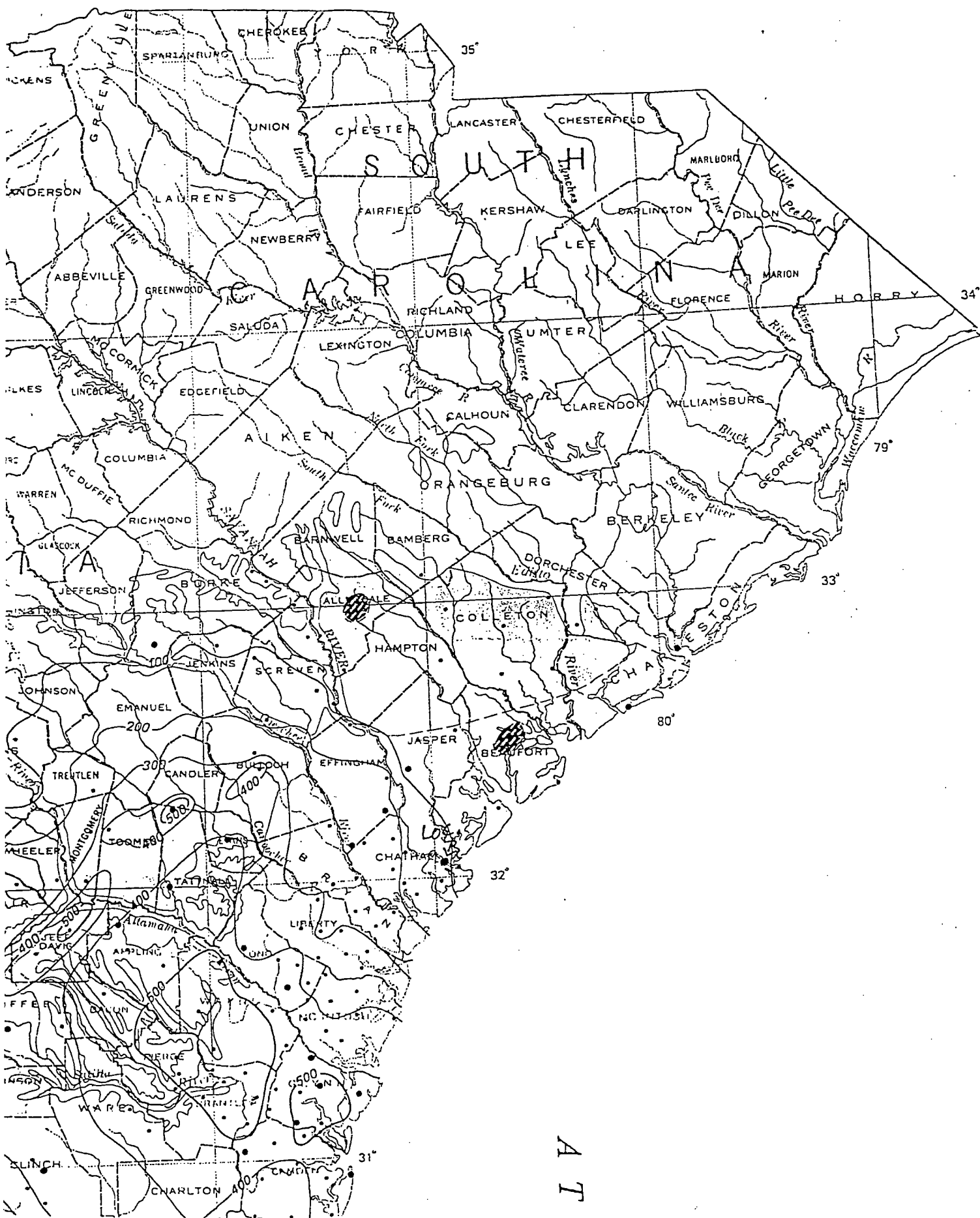
 Older rocks exposed through unit

• Well control point






SCALE 1:2,000,000



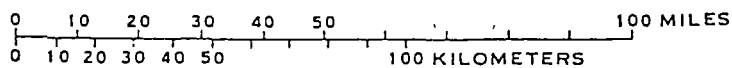
Thickness of rocks of post-Miocene age.



## EXPLANATION

- 500— Line of equal thickness of rocks of Miocene age. Interval 100 feet.
- — — Approximate updip limit of Miocene rocks
-  Fault—Vertical or nearly so
- U Upthrown side
- D Downthrown side
-  Area of outcrop or shallow subcrop of rocks of middle or late Miocene age
-  Area of Tampa Limestone outcrop or shallow subcrop
-  Area where Tampa Limestone is part of subsurface Miocene rocks
-  Older rocks exposed through unit
- Well control point

SCALE 1:2,000,000



Thickness of rocks of Miocene age.

# Sea-Water Encroachment Geology and Ground-Water Resources of Savannah Area Georgia and South Carolina

By HARLAN B. COUNTS and ELLIS DONSKY

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1611

*Prepared in cooperation with the Georgia  
Department of Mines, Mining and  
Geology, the city of Savannah, and  
Chatham County, Georgia*



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Thomas B. Nolan, *Director*

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## FIGURE 1. S

2. J
3. V
4. J
5. J
6. J
7. J
8. J
9. J

## TABLE 1. C

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to pale green. The presence of dolomitic limestone modifies the color to shades of yellow and tan. East of a line between Port Wentworth and Union Bag-Camp Corp. in Savannah the formation contains less limestone and more silt, clay, and marl, and its permeability is lessened.

The Lisbon formation is recorded in all parts of the area from wells penetrating middle Eocene strata.

*Water-bearing properties.*—In and near the outcrop area the Lisbon yields sufficient water for rural, domestic, and municipal supplies. Down dip, in Screven and Effingham Counties, the Lisbon is reached at greater depths, and its water-bearing characteristics in this area are unknown. Still farther down dip, in western Chatham County, the Lisbon formation in part forms the lowest part of the principal artesian aquifer. In the easternmost part of the area, however, the Lisbon is not considered part of the principal artesian aquifer because of the previously mentioned lithologic changes. Along the coast the Lisbon acts as a barrier to the movement of water and is considered to be part of the lower confining layer.

*Base of principal artesian aquifer.*—The fence diagram (pl. 2) shows the extent and thickness of the Lisbon formation, and the geologic section A-A', plate 3, illustrates how the bottom of the principal artesian aquifer rises eastward, cutting across time lines because of a facies change in the sediments. In the vicinity of Savannah the upper boundary of the lower confining layer is about the middle of the Lisbon formation at an approximate depth of 850 feet, but along the coast the upper boundary of the lower confining layer and the top of the Lisbon coincide, generally at a depth of about 700 feet.

The bottom of the principal aquifer is in part determined by the chemical content of the water, which increases with depth to the east and northeast. No line or limit can be set as to the depth at which "good" water is available, but an unusably high chloride content will determine the lower limit for developing water. For example, in well BFT-101 on Hilton Head Island, S.C., water with a chloride content of 368 ppm was recovered from a well point isolated at 543 feet. The bottom of the aquifer extends to a depth of approximately 700 feet in this vicinity, but the lower part of the aquifer, below about 500 feet, contains water high in chloride and cannot be regarded as a source of usable water for normal purposes.

#### GOSPORT SAND

The Gosport sand of middle Eocene age is the uppermost formation of Claiborne age. It is exposed only at a few localities in central Georgia. In the Savannah area, it is entirely in the subsur-

INCH

Charles H.C. Foster, P.G.  
Senior Hydrogeologist

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Fax 912-651-6621

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Thursday, March 29, 2001

0700 START personnel depart for the site.

0730 START personnel arrive onsite, the weather is raining, temp  $\approx 52^{\circ}\text{F}$ , forecast is for 80% chance rain and thunderstorms, high temp to reach  $65^{\circ}\text{F}$ .

0800 START personnel go to Savannah Country Club Golf course to sample private well.

0815 START personnel meet with Chris McDougal who states that the private well is no longer utilized for drinking water, the well is 480 feet deep. However, the Country Club is now hooked up to City of Savannah water system, Mr. McDougal takes Start to the well location.

0845 START is at the well (JS-01-PW) and spigot and let water run, pH 8.71, Cond 0.233, Turbidity 0, Temp.  $17.1^{\circ}\text{C}$

0847 pH 8.67, Cond. 0.233, Turb 0, Temp.  $16.9^{\circ}\text{C}$

0850 pH 8.65, Cond 0.227, Turb. 0,  
Temp 17.2°C.

0855 START collect the JS-01-PW  
groundwater sample from the  
golf course well.

Note: The following entries are being  
transcribed from the field notes taken  
from START personnel during the  
day's sampling activities.

0900 START personnel arrive at the  
Savannah Water Department and  
receive map depicting the municipal  
well locations along with a data  
base print out for all wells in the  
Savannah area.

0930 START arrives at Savannah  
Municipal well #16, which is sample  
location JS-16-DW and begin  
collecting water quality parameters  
from raw water spigot. Temp  
19.7°C, pH 8.11, Cond. 0.254, Turb 0.  
Note: These activities were conducted  
on 3/28/01.

0935 Temp 21.8°C, pH 8.10, cond  
0.235, Turb 0.

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0940 Temp.  $21.9^{\circ}\text{C}$ , pH 8.06,  
cond 0.234, Turb 0.

0943 Temp  $22^{\circ}\text{C}$ , pH 8.05,  
cond 0.234, Turb 0.

0945 START personnel collect the  
JS-16-DW municipal well sample,  
this is raw water sample.

0950 START personnel depart for  
the Savannah Municipal well #11  
location.

0955 START personnel arrive at  
Municipal well #11 location, which  
is the JS-11-DW sample location,  
START begins taking water quality  
readings from raw water spigot  
Temp.  $21.8^{\circ}\text{C}$ , pH 7.98, cond 0.252,  
Turb 0.

1000 Temp  $22.6^{\circ}\text{C}$ , pH 8.0, cond  
0.253, Turb 0.

1003 Temp  $22.2^{\circ}\text{C}$ , pH 8.0, cond  
0.254, Turb 0.

1005 Temp  $22.0^{\circ}\text{C}$ , pH 8.0, cond  
0.254, Turb 0.

1015 START collects the JS-11-DW municipal  
water sample, raw water sample.

1020 START personnel arrive at the Savannah Municipal well #8 location, which is JS-08-DW sample location, which may serve as background / Control location for Municipal well comparison for data.

1020 Temp  $22.0^{\circ}\text{C}$ , PH 7.97, cond 0.262, Turbidity 0.

1021 Temp  $22.5^{\circ}\text{C}$ , PH 7.95, cond 0.263, Turb 0

1022 Temp  $21.8^{\circ}\text{C}$ , PH 7.95, cond 0.264.

1025 Temp  $22.5^{\circ}\text{C}$ , PH 7.95, cond 0.264, Turb 0. START Collects the The JS-08-DW Municipal well raw water sample.

Note: The following entries are from activities being conducted today, 3/29/01.

0840 START at permanent monitoring well MW-2, where START will collect groundwater sample JS-02A-MW, well depth is 12'2", the water level is 8'8". therefore 1 well volume is 2.2 gallons

0850 4

cond

13.9°

0855

cond 1.

0900

cond 1.

0905

cond 1.

0910 8

cond 1.4

0915 9

cond 1.

START

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1045 T

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collects.

## RECORD OF TELEPHONE CONVERSATION

Date: 7/20/01	Project Number: GAD003293057
Name: David L. Brown - Tetra Tech EM Inc Initiated Call <input checked="" type="checkbox"/> (X) Returned Call <input type="checkbox"/> ( ) Received Call <input type="checkbox"/> ( ) Title: Environmental Scientist Time: 1030 Signature: 	Contacted: Mike Coon Title: Agency: Savannah Water Department Address: Savannah, Georgia Telephone: (912) 651-6584
Subject: Water Systems within the City of Savannah Water Operations	
<h3 style="text-align: center;">TELECON SUMMARY</h3> <p>I Spoke to Mr. Coon who stated that there are 7 systems that make up the City of Savannah Water system, and all of the wells are completed in the Floridan Aquifer. He also stated that the surficial aquifer is of poor quality and brackish, and did not know of private residences utilizing the surficial aquifer. He said that the Savannah Water Department system used to consist of 8 systems, and as of February 2001, the Georgetown and Gateway systems were combined to form the Georgetown/Gateway system and the water from both of the system wellfields is blended. He said that He also said that the the Georgetown/Gateway, Wilmington Island, Whitmarsh Island, Dutch Island and Quarters systems are not interconnected with the Savannah Main system. He said they are individually maintained systems, and the water from the wells within the individual well systems was blended, prior to distribution.</p>	
<h3 style="text-align: center;">RESPONSE REQUIRED</h3> <p style="text-align: center;"> <input checked="" type="checkbox"/> (X) None            <input type="checkbox"/> ( ) Phone call            <input type="checkbox"/> ( ) Memo            <input type="checkbox"/> ( ) Letter            <input type="checkbox"/> ( ) Report       </p>	
cc: File <input checked="" type="checkbox"/> (X)            Project Manager <input type="checkbox"/> ( )            Principal Investigator            Other (specify)	

## RECORD OF TELEPHONE CONVERSATION

Date: March 23, 2001

Project Number: 4T-01-10-A-006

Name: Sandra Harrigan

Initiated Call ☒ (X)Returned Call ☐ ( )Received Call ☐ ( )

Title: Biologist

Time: 1110

Signature: *Sandra Harrigan*

Contacted: Kenny Dumas

Title: Water Operations Director

Agency: City of Savannah Water Department

Address: 706 Stiles Avenue

Telephone: (912) 651-6584

Subject: Well locations for the City of Savannah Water Department

### TELECON SUMMARY

I contacted Mr. Dumas regarding the well locations for the City of Savannah Water Department. Mr. Dumas indicated the City of Savannah Water Department has a map with the well locations on it. Also, a printout is available with the geographic coordinates of the wells. A map depicting the City of Savannah Water Department's service area is also available.

I indicated that I will be in Savannah during the week of March 26, 2001 and will be able to stop by the water department's office to pick up the information. (Attached)

Mr. Dumas indicated that if he is not at the office on Monday, Michael Coon, or Kathy will be able to assist me.

### RESPONSE REQUIRED

☐ ( ) None   ☐ ( ) Phone call   ☐ ( ) Memo   ☐ ( ) Letter   ☐ ( ) Report

cc: File ☐ ( ) Project Manager ☐ ( ) Principal Investigator Other (specify)

Attach the maps and the printout with the geographical coordinates

system  
name

Taps pup

contact  
name

company

Address

phone  
#last  
update

GARDEN CITY	2800	7280	Mr. JOHNNIE ARNOLD	CITY OF GARDEN CITY	POB 7548	GARDEN CITY	GA 31418-7548	912-966-7777	10/13/1999
POOLER	1224	3681	Mr. DENNIS BAXTER	CITY OF POOLER	100 S. WEST HIGHWAY 80	POOLER	GA 31322	912-748-7261	8/8/2000
PORT WENTWORTH	1288	3349	JOHN R HINLEY	CITY OF PORT WENTWORTH	305 SOUTH COASTAL HIGHWAY	PORT WENTWORTH	GA 31407	912-964-4379	10/13/1999
SAVANNAH-MAIN	60028	156072	Mr. HARRY JUE	SAVANNAH WATER & SEWER BUREAU	POB 1027	SAVANNAH	GA 31402-1027	912-651-4241	10/13/1999
SAVANNAH-I & D	35	10619	Mr. MICHAEL BROWN	CITY OF SAVANNAH	POB 1027	SAVANNAH	GA 31402-1027	912-651-6415	6/28/2000
TYBEE ISLAND	1093	2842	WALTER PARKER	CITY OF TYBEE ISLAND	POB 2749	TYBEE ISLAND	GA 31328-2749	912-786-4573	10/13/1999
THUNDERBOLT	850	2786	Mr. JAMES A PETREA	TOWN OF THUNDERBOLT	415 BONAVENTURE ROAD SUITE F	THUNDERBOLT	GA 31404	912-354-5533	10/13/1999
SAVANNAH CHRISTIAN PREP.SCHOOL	15	1150	Ms. MARY L REDDING	SAVANNAH CHRISTIAN PREP SCHOOL	POB 2848	SAVANNAH	GA 31402-2848	912-233-9607	10/13/1999
SAVANNAH-GATEWAY	124	1001	Mr. HARRY JUE	SAVANNAH WATER & SEWER BUREAU	POB 1027	SAVANNAH	GA 31402-1027	912-651-4241	1/4/2000
GOLDEN ISLES SUBDIVISION	203	525	Mr. ANTHONY H ABBOTT	COASTAL WATER & SEWER CO., LLC	119 WEST OGLETHORPE AVENUE	SAVANNAH	GA 31401	912-233-3254	10/13/1999
GROVE HILL SUBDIVISION	110	250	Mr. CHARLES W SMITH	LAKESHORE DEV. ASSOC., INC.	309 LAKESHORE DRIVE	SAVANNAH	GA 31419	912-927-9563	8/29/2000
AZALEA MOBILE HOME PLAZA	183	475	Mr. RICHARD KYALL	AZALEA MOBILE HOME PARK	4711 OGEECHEE ROAD	SAVANNAH	GA 31405	912-234-2811	6/16/2000
<del>████████████████████</del>	38	98	<del>████████████████████</del>	<del>████████████████████</del>	<del>████████████████████</del>	<del>████████████████████</del>	<del>████████████████████</del>	<del>████████████████████</del>	12/14/2000
BLOOMINGDALE	266	1690	WILLIAM C STROZIER	CITY OF BLOOMINGDALE	POB 216	BLOOMINGDALE	GA 31302-0216	912-748-0268	4/18/2000
CROSBY-MOBILE ESTATES	48	124	Mr. RAY CROSBY	CROSBY MOBILE ESTATES	5231 OGEECHEE ROAD	SAVANNAH	GA 31405	912-232-1221	4/14/2000
CHEROKEE MOBILE HOME PARK	33	88	Mr. JAMES ROYAL	CHEROKEE MOBILE HOME PARK	6500 HIGHWAY 21	PORT WENTWORTH	GA 31407	912-964-4270	10/13/1999
COTTONVALE ESTATES	100	260	Mr. DONALD DYCHES	DYCHES CONSTRUCTION COMPANY	32E MONTGOMERY CROSS ROADS	SAVANNAH	GA 31406	912-927-9777	10/13/1999
DYCHES MOBILE ESTATES	81	210	Mr. DONALD DYCHES	DYCHES CONSTRUCTION COMPANY	32E MONTGOMERY CROSS ROADS	SAVANNAH	GA 31406	912-927-9777	10/13/1999
EAST PINES SUBDIVISION	148	450	Mr. ANTHONY H ABBOTT	COASTAL WATER & SEWER CO., LLC	119 WEST OGLETHORPE AVENUE	SAVANNAH	GA 31401	912-233-3254	10/13/1999
ESTILL HAMMOCK/SPANISH HAMMOCK	107	317	Mr. THOMAS A SMITH	SOUTH ATLANTIC UTILITIES, INC.	POB 13705	SAVANNAH	GA 31416-3705	912-354-6296	10/13/1999
ATLANTIC WS-ARGYLE EST	24	60	Mr. RHODES WERTH	ATLANTIC WATER SYSTEMS	POB 30806	SAVANNAH	GA 31410-0806	912-232-1106	2/1/2000
GARDEN ACRES ESTATES	240	624	Mr. DONALD J TUTEN	GARDEN ACRES ESTATES	1105 SOUTH ROGERS	POOLER	GA 31322	912-748-4433	6/16/2000
SAVANNAH-DUTCH ISLAND	317	824	Mr. HARRY JUE	SAVANNAH WATER & SEWER BUREAU	POB 1027	SAVANNAH	GA 31402-1027	912-651-4241	10/13/1999
GRAYS SUBDIVISION	225	585	Mr. GREG C CREWS	PLYM INCORPORATED	POB 546	SAVANNAH	GA 31402-0546	912-232-1101	10/13/1999
HARBOUR CREEK SUBDIVISION	212	552	Mr. DON SMITH	SOUTH ATLANTIC UTILITIES, INC.	POB 13705	SAVANNAH	GA 31416-3705	912-354-6296	10/13/1999
HOLIDAY MOBILE PARK	37	112	Mr. ROSCOE FLOYD	HOLIDAY MOBILE HOME PARK	138 SALT CREEK ROAD LOT 1	SAVANNAH	GA 31405	912-352-4973	6/21/2000
THE LANDINGS SUBDIVISION	3239	8422	Mr. DAVE CARTER	SKIDAWAY ISLAND UTILITIES	2335 SANDERS ROAD	NORTHBROOK	IL 60062	847-498-6440	11/20/2000
LARCHMONT UTILITIES	1152	2995	Mr. ANTHONY H ABBOTT	COASTAL WATER & SEWER CO., LLC	119 WEST OGLETHORPE AVENUE	SAVANNAH	GA 31401	912-233-3254	10/13/1999
NORTONS TRAILER PARK	52	138	Ms. MARGARET WILSON	NORTONS TRAILER PARK	102 BUCKHALTER RD. #51	SAVANNAH	GA 31405	912-234-7682	10/13/1999
ATLANTIC WS-OGEECHEE FARMS	325	812	Mr. RHODES WERTH	ATLANTIC WATER SYSTEMS	POB 30806	SAVANNAH	GA 31410-0806	912-232-1106	2/1/2000
PARKERSBURG SUBDIVISION	500	1300	Mr. MERRITT DIXON	PARKERSBURG WATER CORP.	200 E ST JULIAN ST-SUITE 527	SAVANNAH	GA 31401	912-233-6643	10/13/1999
ATLANTIC WS-PINE BARREN ACRES	50	125	Mr. RHODES WERTH	ATLANTIC WATER SYSTEMS	POB 30806	SAVANNAH	GA 31410-0806	912-232-1106	2/1/2000
PINE FOREST SUBDIVISION	78	203	Mr. THOMAS A SMITH	SOUTH ATLANTIC UTILITIES, INC.	POB 13705	SAVANNAH	GA 31416-3705	912-354-6296	10/13/1999
PLANTATION INN MOBILE ESTATES	77	200	Mr. OSCAR D SMART	PLANTATION INN MOBILE ESTATES	129 WINCHESTER DR.	SAVANNAH	GA 31410	912-897-3088	5/19/2000
CHATHAM WC-RIO VISTA/BURNSIDE	242	629	Mr. DONALD S SMITH	CHATHAM WATER COMPANY	POB 14111	SAVANNAH	GA 31416-4111	912-354-6296	10/13/1999
RIVER OAKS SUBDIVISION	175	455	Mr. FRED WILLIAMS	RIVER OAKS SUBDIVISION	6205 ABERCORN STREET SUITE 205	SAVANNAH	GA 31405	912-355-6446	10/13/1999
SKIDAWAY MOBILE ESTATES	185	480	Mr. DONALD DYCHES	DYCHES CONSTRUCTION COMPANY	32E MONTGOMERY CROSS ROADS	SAVANNAH	GA 31406	912-927-9777	10/13/1999
SOUTHSIDE MOBILE ESTATES	77	200	Mr. DONALD DYCHES	DYCHES CONSTRUCTION COMPANY	32E MONTGOMERY CROSS ROADS	SAVANNAH	GA 31406	912-927-9777	10/13/1999
SOUTHWINDS COMMUNITY	150	450	Mr. MARK V SMITH	COASTAL GEORGIA WATER COMPANY	POB 14111	SAVANNAH	GA 31416-4111	912-352-9339	4/18/2000
<del>████████████████████</del>	192	500	<del>████████████████████</del>	<del>████████████████████</del>	<del>████████████████████</del>	<del>████████████████████</del>	<del>████████████████████</del>	<del>████████████████████</del>	10/13/1999
TALAHU ISLAND COMMUNITY	380	1066	Mr. DON SMITH	SOUTH ATLANTIC UTILITIES, INC.	POB 13705	SAVANNAH	GA 31416-3705	912-354-6296	10/13/1999
THE BLUFF SUBDIVISION	21	55	Mr. KEITH HOUSMAN	THE BLUFF HOMEOWNER'S ASSOC.	9 SANDY POINT ROAD	SAVANNAH	GA 31404	912-920-2855	10/13/1999
VICKS MOBILE HOME PARK	70	247	Mr. GLADYS CRUMPTON	VICK'S MOBILE HOME PARK	10509 MIDDLEGROUND ROAD	SAVANNAH	GA 31419	912-925-7671	10/13/1999
WHITE OAKS SUBDIVISION	100	360	Mr. DONALD S SMITH	CHATHAM WATER COMPANY	POB 14111	SAVANNAH	GA 31416-4111	912-354-6296	4/18/2000
SAVANNAH YACHT & COUNTRY CLUB	58	150	Mr. MARK V SMITH	COASTAL GEORGIA WATER COMPANY	POB 14111	SAVANNAH	GA 31416-4111	912-352-9339	10/13/1999
FT. PULASKI NATL. MONT. FORT	1	900	Mr. JOHN D BREEN	FT. PULASKI NATIONAL MONUMENT	POB 30757	SAVANNAH	GA 31410-0757	912-786-5787	10/13/1999
HERCULES INC.	1	130	Mr. ROBERT MALNIGHT	HERCULES INC.	3000 LOUISVILLE ROAD	SAVANNAH	GA 31401-1631	912-964-2121	10/13/1999
BUILDING MATERIALS MANUFACTURING	1	140	Mr. AKE T HIPPERT	BUILDING MATERIALS MANUFACTURING CO	POB 394	SAVANNAH	GA 31418-7329	912-964-1517	10/29/1999
NATIONAL GYPSUM OF GEORGIA, LP	1	125	Mr. GERALD T. NOAKES	NATIONAL GYPSUM OF GEORGIA, LP	POB 394	GARDEN CITY	GA 31418	912-964-1561	10/13/2000
UGA-SKIDAWAY OCEANOGRAPHY INST	18	108	Mr. STEVEN J CARIGNAN	SKIDAWAY INST. OF OCEANOGRAPHY	10 OCEAN SCIENCE CIRCLE	SAVANNAH	GA 31411	912-598-2456	8/28/2000
MORGAN MOBILE HOME PARK	53	138	Mr. DARWIN K MORGAN	MORGAN MOBILE HOME PARK	ROUTE 1, BOX 23	BLOOMINGDALE	GA 31302	912-748-4391	10/13/1999
MELODY ACRES PARK	75	195	ELSIE O POWERS	MELODY ACRES PARK	POB 456	RICHMOND HILL	GA 31324-0456	912-925-6783	10/13/1999
SAVANNAH-GEORGETOWN COMMUNITY	2147	5582	Mr. HARRY JUE	SAVANNAH WATER & SEWER BUREAU	POB 1027	SAVANNAH	GA 31402-1027	912-651-4241	12/6/1999
MEMORIAL MEDICAL CENTER	20	2500	Mr. ANDY BLALOCK	MEMORIAL MEDICAL CENTER	4700 WATERS AVENUE	SAVANNAH	GA 31403	912-350-8365	10/13/1999
ATLANTIC WS-OLIVER PINES	12	30	Mr. RHODES WERTH	ATLANTIC WATER SYSTEMS	POB 30806	SAVANNAH	GA 31410-0806	912-232-1106	2/1/2000
OLD FORT JACKSON MUSEUM	1	100	Mr. SCOTT W SMITH	OLD FT. JACKSON MUSEUM	1 FORT JACKSON ROAD	SAVANNAH	GA 31404	912-692-0952	10/13/1999
DNR-SKIDAWAY IS. STATE PARK	2	550	Mr. WAYNE ESCOE	DIVISION OF STATE PARKS	205 BUTLER ST., SE SUITE 1352	ATLANTA	GA 30334	404-656-2770	8/28/2000
NASSAU WOODS MOBILE HOME PARK	192	498	Mr. FRANCIS MORRIS	WATER, WASTE WATER CONTRACTOR	POB 665	POOLER	GA 31322-0665	912-927-6567	10/13/1999

COMMODORE POINT	102	265 Mr. CLIFF ROBERDS	COMMODORE POINT WATER WORKS	2500 TENNESSEE AVENUE	SAVANNAH	GA 31404	10/13/1999
DERENNE PLAZA CONDO	33	86 Mr. LEMAUND E WELLS	DERENNE PLAZA OWNERS ASSOC.	24 E LIBERTY STREET	SAVANNAH	GA 31401	912-352-2365 10/13/1999
WHITEMARSH ESTATES	150	393 Mr. ANTHONY H ABBOTT	COASTAL WATER & SEWER CO., LLC	119 WEST OGLETHORPE AVENUE	SAVANNAH	GA 31401	912-233-3254 12/1/1999
OATLAND ISLAND EDUCATION CNTR.	1	75 Mr. R A GILLIARD	CHATHAM CO. BD. OF EDUCATION	2219 GAMBLE ROAD	SAVANNAH	GA 31405	912-651-7286 10/13/1999
CHATHAM CO.-RUNAWAY POINT	182	472 Mr. MICHAEL KAIGLER	CHATHAM CO.DEPT.OF PUBLIC WKS.	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840 10/13/1999
ENNIS MOBILE HOME PARK	18	47 Mr. NORMAN F ENNIS	ENNIS MOBILE HOME PARK	8625 FERGUSON AVENUE	SAVANNAH	GA 31406	912-355-4842 10/13/1999
CHATHAM CO.-MONTGOMERY AREA	400	1040 Mr. MICHAEL KAIGLER	CHATHAM CO.DEPT.OF PUBLIC WKS.	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840 10/13/1999
BETHESDA HOME FOR BOYS	13	65 Mr. WILLIAM MCILRATH	BETHESDA HOME FOR BOYS	9520 FERGUSON AVENUE	SAVANNAH	GA 31406	912-351-2040 4/18/2000
LAKESIDE MOBILE HOME PARK	51	133 Ms. RONELLA MCCALLER	LAKESIDE MOBILE HOME PARK	4504 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-234-9077 12/14/1999
WHITFIELD PARK SUBDIVISION	236	614 Mr. MARK V SMITH	COASTAL GEORGIA WATER COMPANY	POB 14111	SAVANNAH	GA 31416-4111	912-352-9339 9/29/2000
USA-HUNTER ARMY AIRFIELD - MAIN	694	3550 Mr. GREGORY V. STANLEY	US DEPT. OF THE ARMY	1550 FRANK COCHRAN DR. BLDG. 1137	FORT STEWART	GA 31314-4927	912-767-2010 8/16/2000
CHATHAM CO.-GLEN OF ROBIN HOOD	1744	4534 Mr. MICHAEL KAIGLER	CHATHAM CO.DEPT.OF PUBLIC WKS.	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840 10/13/1999
FOSS MOBILE HOME PARK	77	203 Mr. FRANK R FOSS	FOSS MOBILE HOME PARK	270 RIVER BEND ROAD	RICHMOND HILL	GA 31324	912-352-2365 10/13/1999
LIVE OAK MOBILE HOME PARK	21	55 Mr. BEN B WALL	LIVE OAK MOBILE HOME PARK	128 SCHOONER DRIVE	SAVANNAH	GA 31410	912-927-6110 5/30/2000
SHADY ACRES MOBILE HOME PARK	53	138 Mr. WILLIAM G ANDERSON	SHADY ACRES MOBILE HOME PK.	115 QUACCO ROAD	SAVANNAH	GA 31419	912-925-3735 1/14/2000
GROVE POINT MOBILE EST.	79	206 Mr. MARION T LANIER	LANIER PROPERTIES	POB 16134	SAVANNAH	GA 31416-6134	912-352-0983 10/13/1999
BEAULIEU VILLAGE SUBDIVISION	31	81 Mr. MARK V SMITH	COASTAL GEORGIA WATER COMPANY	POB 14111	SAVANNAH	GA 31416-4111	912-352-9339 10/13/1999
DERRICK SUBDIVISION	55	143 Mr. WILLIAM F KELLY	SUNBELT UTILITIES, INC.	POB 703	STATESBORO	GA 30459-0703	912-764-9695 3/23/2000
CHATHAM CO.-LITTLE NECK PLANTA	41	107 Mr. MICHAEL KAIGLER	CHATHAM CO.DEPT.OF PUBLIC WKS.	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840 10/13/1999
MILLER PINES MOBILE HOME PARK	46	109 Mr. THOMAS A SMITH	SOUTH ATLANTIC UTILITIES, INC.	POB 13705	SAVANNAH	GA 31416-3705	912-354-6296 10/13/1999
CHATHAM CO.-MODENA ON SKIDAWAY	23	60 Mr. MICHAEL KAIGLER	CHATHAM CO.DEPT.OF PUBLIC WKS.	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840 10/13/1999
CHATHAM CO.-BURROUGHS COMM.	200	520 Mr. MICHAEL KAIGLER	CHATHAM CO.DEPT.OF PUBLIC WKS.	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840 10/13/1999
CANDLER GENERAL HOSPITAL	1	1400 Mr. MICHAEL MOBLEY	CANDLER GENERAL HOSPITAL	POB 9787	SAVANNAH	GA 31412-9787	912-692-6071 10/13/1999
MARTY'S FRIED CHICKEN	3	48					
CHATHAM CO.-WEST CHATHAM CO.	139	361 Mr. MICHAEL KAIGLER	CHATHAM CO.DEPT.OF PUBLIC WKS.	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840 10/13/1999
WILMINGTON ISL. WS, INC.	4	100 Mr. MICHAEL TOWE	WILMINGTON ISL. WATER SUPPLY	120 VIKERY LANE	SAVANNAH	GA 31410	912-898-8039 10/13/1999
C & S MOBILE ESTATES	31	80 Mr. CHARLES B RAHN	C & S MOBILE ESTATES	POB 7865	GARDEN CITY	GA 31418-7865	912-964-8106 10/13/1999
BARNWELL GARDENS SUBDIVISION	38	99 Ms. MILLIE M BARNWELL	BARNWELL GARDENS MHP	6594 HIGHWAY 21	PORT WENTWORTH	GA 31407	912-964-4174 10/13/1999
HEATHCOTE FARMS SUBDIVISION	26	68 Mr. DONALD S SMITH	CHATHAM WATER COMPANY	POB 14111	SAVANNAH	GA 31416-4111	912-354-6296 4/18/2000
WHITFIELD MOBILE ESTATES	33	90 Mr. DONALD DYCHES	DYCHES CONSTRUCTION COMPANY	32E MONTGOMERY CROSS ROADS	SAVANNAH	GA 31406	912-927-9777 10/13/1999
LIBERTY INN	2	300 Mr. BHARAT L PATEL	LIBERTY INN	4005 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-236-8236 10/13/1999
SAVANNAH MOTOR LODGE	32	30 Mr. RASHMIKANT PATEL	SAVANNAH MOTOR LODGE	5630 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-236-1534 10/13/1999
BELLAIRE WOODS CAMPGROUND	132	150 Mr. PAUL P GALIPEAULT	BELLAIRE WOODS CAMPGROUND	805 FORT ARGYLE ROAD, HWY 204	SAVANNAH	GA 31419	912-748-4000 10/13/1999
SAVANNAH GOLF CLUB	2	200 Mr. CHRIS MCDUGALL	SAVANNAH GOLF CLUB	POB 3536 STATION B	SAVANNAH	GA 31414-3536	912-236-9342 9/5/2000
ATLANTIC WS-RIVERSIDE ESTATES	46	63 Mr. RHODES WERTH	ATLANTIC WATER SYSTEMS	POB 30806	SAVANNAH	GA 31410-0806	912-232-1106 1/10/2000
SEABREEZE MOBILE HOME PARK	32	83 Ms. VELMA S HARWARD	SEABREEZE MOBILE HOME PARK	5019 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-233-9977 10/13/1999
THUNDERBIRD MOTEL	25	35 Mr. AMAN PATEL	THUNDERBIRD MOTEL	4015 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-234-3496 10/13/1999
WILMINGTON ISLAND CLUB	12	200 Mr. MICHAEL FOSTER	WILMINGTON ISLAND CLUB	612 WILMINGTON ISLAND ROAD	SAVANNAH	GA 31410	912-897-1612 10/13/1999
ROGER WOOD PACKING COMPANY	1	225 Mr. DAVID SOLANA	ROGER WOOD PACKING COMPANY	POB 2926	SAVANNAH	GA 31402-2926	912-964-6335 10/13/1999
TEDDERS MOTEL	25	75 Mr. NILESH PATEL	TEDDERS MOTEL	4009 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-236-6378 10/13/1999
SAVANNAH STEEL INC.	8	50 Mr. P E CLIFTON	SAVANNAH STEEL INC.	POB 1988	SAVANNAH	GA 31402-1988	912-964-6391 10/13/1999
SASSER'S SEAFOOD INC.	4	30 Mr. W O SASSER	SASSER'S SEAFOOD INC.	135 JOHNNY MERCER BLVD.	SAVANNAH	GA 31410	912-897-1154 1/9/2000
GEORGIA PACIFIC-SAV PLYWOOD	5	270 Mr. E D PEAVY	GA PAC CORP - HARDWOOD PLT	POB 367	SAVANNAH	GA 31498-0367	912-964-2230 10/13/1999
THE TRAVELER'S INN	25	25 Mr. HASMUKH D PATEL	THE TRAVELER'S INN	5629 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-233-9308 1/9/2000
SANDMAN MOTEL	15	17 Mr. KIRANKUMAR PATEL	SANDMAN MOTEL	5015 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-236-2631 10/13/1999
LOVE'S FISHING CAMP RESTAURANT	3	225 Mr. O F LOVE	LOVE'S FISHING CAMP REST.	6805 BASIN ROAD	SAVANNAH	GA 31419	912-925-3616 1/9/2000
SAVANNAH YACHT CLUB	2	175 Mr. TED SHAW	SAVANNAH YACHT CLUB	ROUTE 6, BOX 271 B	SAVANNAH	GA 31410	912-897-1314 12/15/1999
COASTAL EQUITIES INC.NO.2	41	100 Mr. H L FRANKLIN	COASTAL EQUITIES, INC.	POB 1064	STATESBORO	GA 30459-1064	912-764-9616 10/13/1999
COASTAL EQUITIES INC.NO.1	52	100 Mr. H L FRANKLIN	COASTAL EQUITIES, INC.	POB 1064	STATESBORO	GA 30459-1064	912-764-9616 10/13/1999
CROSBY MOBILE ESTATES II	22	65 Mr. RAY CROSBY	CROSBY MOBILE ESTATES	5231 OGEECHIEE ROAD	SAVANNAH	GA 31405	912-232-1221 1/10/2001
FORT PULASKI NATIONAL MONUMENT VI	1	900 Mr. JOHN D BREEN	FT. PULASKI NATIONAL MONUMENT	POB 30757	SAVANNAH	GA 31410-0757	912-786-5787 1/9/2000
FT. PULASKI NATL. MONT. PICNIC	3	250 Mr. JOHN D BREEN	FT. PULASKI NATIONAL MONUMENT	POB 30757	SAVANNAH	GA 31410-0757	912-786-5787 10/13/1999
SAVANNAH-WILMINGTON ISLAND	3976	10338 Mr. HARRY JUE	SAVANNAH WATER & SEWER BUREAU	POB 1027	SAVANNAH	GA 31402-1027	912-651-4241 10/13/1999
USA-HUNTER AF HORSE STABLES #5	5	50 OVIDIO E PEREZ	HQS 3RD INF DIV M & FT STEWAR	1557 FRANK COCHRAN DRIVE	FORT STEWART	GA 31314-4928	912-767-4587 10/13/1999
DEAN FOREST ROAD TRAILER PARK	25	65 Mr. PAUL F WOODS	DEAN FOREST ROAD TP-NORTH	1306 DEAN FOREST ROAD	SAVANNAH	GA 31405	912-236-9103 10/13/1999

DOT-REST AREA WELCOME CTR. 112	1	4500 Mr. STEVEN HENRY	DOT OPERATIONS DIVISION	2 CAPITAL SQUARE, ROOM 270	ATLANTA	GA 30334	404-656-5314	10/13/1999
CHATHAM CO-SAV PORT AUTH IND P	41	106 Mr. MICHAEL KAIGLER	CHATHAM CO. DEPT. OF PUBLIC WKS.	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840	10/13/1999
ISLANDS EXPRESSWAY REC. PARK	1	175 Mr. JAMES D MCKIRGAN	CHATHAM CO WATER & SEWER AUTH	POB 8161	SAVANNAH	GA 31412-8161	912-652-6840	10/13/1999
DEAN FOREST CHEVRON	1	60 Mr. RAJENDRA B PATEL	DEAN FOREST CHEVRON	1715 DEAN FOREST ROAD	SAVANNAH	GA 31408	912-964-8508	10/13/1999
ST. PETER THE APOSTLE SCHOOL	1	325 PATRICK O'BRIEN	ST. PETER THE APOSTLE SCHOOL	7020 CONCORD RD. - BOX 30460	SAVANNAH	GA 31404-0460	912-897-5224	1/3/2001
ARGYLE VILLAGE SUBDIVISION	24	65 Ms. WILMA C LOWE		409 W. 62ND STREET	SAVANNAH	GA 31405	912-355-7000	7/10/2000
SAVANNAH-WHITEMARSH ISLAND	1342	3489 Mr. HARRY JUE	SAVANNAH WATER & SEWER BUREAU	POB 1027	SAVANNAH	GA 31402-1027	912-651-4241	12/3/1999
RIVERBLUFF SUBDIVISION	48	125 Mr. DENNIS A WATERS		POB 727	ALLENHURST	GA 31301-0727	912-368-9205	7/17/2000
AIRPORT OFFICES & INDUST. PARK	12	120 Dr. H. DORSEY FLANDERS	AIRPORT OFFICE & INDUSTRIAL PA	1 MEDICAL ARTS CENTER	SAVANNAH	GA 31405	912-354-2915	8/9/2000
ATLANTA WOOD INDUSTRIES	1	71 Mr. DAVID T BRYCE	ATLANTIC WOOD INDUSTRIES, INC.	POB 1608	SAVANNAH	GA 31402-1608	912-964-1234	10/13/1999
SAVANNAH-SAVANNAH QUARTERS	456	1186 Mr. HARRY JUE	SAVANNAH WATER & SEWER BUREAU	POB 1027	SAVANNAH	GA 31402-1027	912-651-4241	12/6/1999
SPEEDWAY #38	1	200 Mr. PHIL NEWTON	SPEEDWAY SUPER AMERICA LLC	3200 POINTE PARKWAY-SUITE 150	NORCROSS	GA 30092	800-422-5889	10/13/1999
USCG-TYBEE STATION	1	53 Mr. JOSEPH MCGUIRE	USCG-TYBEE STATION	POB 1400	TYBEE ISLAND	GA 31328-1400	912-786-5440	4/18/2000
SAVANNAH BEND MARINA	31	25 Mr. SCOTT ROBERTS	SAVANNAH BEND MARINA	ROUTE 14, BOX 188 OLD TYBEE RD	THUNDERBOLT	GA 31410	912-897-3625	10/13/1999
B'DETTE MOBILE BLUFF	16	42 Ms. MARTHA W WATERS		28 MCINTOSH DRIVE	SAVANNAH	GA 31406	912-598-0832	12/14/2000
SANDY BLUFF SUBDIVISION	24	65 Mr. WILLIAM F KELLY	SUNBELT UTILITIES, INC.	POB 703	STATESBORO	GA 30459-0703	912-764-9695	7/10/2000
PINELAND CHRISTIAN ACADEMY	3	300 Mr. MARK S CRONEMEYER	PINELAND CHRISTIAN ACADEMY	4906 PINELAND DRIVE	SAVANNAH	GA 31409	912-238-5053	10/13/1999
D HOFFMAN SUBWAY RESTAURANT	2	125 Mr. DENNIS M HOFFMAN	HOFFMAN RESTAURANT	4119 OGEECHEE ROAD	SAVANNAH	GA 31405	912-236-2253	10/13/1999
DEAN FOREST RD.TP-NORTH	15	39 Mr. PAUL F WOODS	DEAN FOREST ROAD TP-NORTH	1306 DEAN FOREST ROAD	SAVANNAH	GA 31405	912-236-9103	10/13/1999

# LONGITUDE AND LATITUDE OF SAVANNAH'S WATER WELLS

## CITY MAIN SYSTEM

<u>WELL NO.</u>	<u>LONGITUDE</u>	<u>LATITUDE</u>
Well 1	81° 04' 49.0" W	32° 01' 32.2"N
Well 2	81° 06' 51.6" W	32° 04' 19.6"N
Well 3	81° 06' 45.1" W	32° 04' 81.1"N
Well 4	81° 06' 28.2" W	32° 04' 13.4"N
Well 5	81° 08' 54.5" W	32° 02' 26.9"N
Well 6 (Plugged no longer in service)	81° 05' 48.6" W	32° 00' 40.0"N
Well 7	81° 05' 07.0" W	32° 02' 50.6"N
Well 8	81° 04' 02.8" W	32° 03' 26.0"N
Well 9	81° 06' 14.2" W	32° 02' 20.8"N
Well 10	81° 07' 49.3" W	32° 05' 26.1"N
Well 11	81° 03' 34.0" W	32° 03' 52.1"N
Well 12	81° 05' 45.9" W	32° 03' 28.4"N
Well 13	81° 07' 04.0" W	31° 59' 48.8"N
Well 14	81° 08' 28.7" W	31° 58' 28.1"N
Well 15	81° 08' 41.9" W	31° 59' 23.8"N
Well 16	81° 03' 01.5" W	32° 04' 38.4"N
Well 23	81° 09' 15.3" W	31° 58' 08.1"N
Well 25	81° 08' 54.5" W	32° 02' 26.9"N
Well 26	81° 08' 58.7" W	31° 56' 30.8"N
Well 27	81° 09' 20.8" W	31° 59' 13.6"N
Well 31	81° 10' 00.1" W	32° 03' 15.4"N
Well 41	81° 03' 24.6" W	32° 01' 29.5"N
Well 42	81° 04' 15.0" W	32° 00' 34.0"N

## DUTCH ISLAND SYSTEM

<u>WELL NO.</u>	<u>LONGITUDE</u>	<u>LATITUDE</u>
Well 33	81° 02' 26.6" W	32° 00' 35.3"N
Well 34	81° 02' 06.9" W	32° 00' 08.5"N
Well 38	81° 01' 46.7" W	32° 00' 18.1"N

### GEORGETOWN/GATEWAY SYSTEM

<u>WELL NO.</u>	<u>LONGITUDE</u>	<u>LATITUDE</u>
Well 29	81° 13' 37.9" W	31° 58' 50.4"N
Well 30	81° 12' 27.2" W	31° 59' 28.3"N
Well 35	81° 17' 05.6" W	32° 00' 22.7"N
Well 36	81° 17' 00.7" W	31° 59' 59.4"N

### SAVANNAH QUARTERS SYSTEM

<u>WELL NO.</u>	<u>LONGITUDE</u>	<u>LATITUDE</u>
Well 37*	81° 12' 38.8" W	32° 04' 13.3"N
Well 40*	81° 12' 40.5" W	32° 04' 13.5"N

\*Same Well Site

### TRAVIS SYSTEM

<u>WELL NO.</u>	<u>LONGITUDE</u>	<u>LATITUDE</u>
Well 17	81° 11' 39.9" W	32° 07' 17.3"N
Well 18	81° 11' 42.4" W	32° 07' 09.9"N
Well 19	81° 11' 37.9" W	32° 07' 28.7"N

### WHITEMARSH ISLAND SYSTEM

<u>WELL NO.</u>	<u>LONGITUDE</u>	<u>LATITUDE</u>
Well 28*	80° 59' 03.7" W	32° 02' 05.7"N
Well 32	81° 01' 07.7" W	32° 02' 22.3"N
Well 39*	80° 59' 06.1" W	32° 02' 05.8"N

\*Same Well Site

### WILMINGTON ISLAND SYSTEM

<u>WELL NO.</u>	<u>LONGITUDE</u>	<u>LATITUDE</u>
Well 20	80° 58' 38.1" W	32° 00' 41.9"N
Well 21	80° 59' 14.7" W	31° 59' 40.5"N
Well 22	80° 59' 28.8" W	31° 59' 23.3"N
Well 24	80° 58' 10.9" W	32° 00' 21.2"N

KD:km  
3/23/01

WELL INFORMATION  
CITY OF SAVANNAH

<u>WELL NO.</u>	<u>VIDEO DATE</u>	<u>CASING DEPTH</u>	<u>BORE DEPTH</u>	<u>CASING SIZE</u>	<u>PUMP SET</u>
1	03/01/00	300 FT.	970 FT.	20 IN.	200 FT.
2	04/16/96	240 FT.	465 FT.	16 IN.	200 FT.
3	03/27/97	220 FT.	681 FT.	24 IN.	150 FT.
4	11/25/98	250 FT.	683 FT.	20 IN.	150 FT.
5	03/20/98	260 FT.	886 FT.	26 IN.	220 FT.
7	03/30/95	213 FT.	235 / 550 FT.	24 IN.	200 FT.
8		245 FT.	587 FT.	24 IN.	230 FT.
9	12/20/91	267 FT.	655 FT.	20 IN.	220 FT.
10	06/26/97	264 FT.	683 FT.	12 IN.	220 FT.
11		240 FT.	714 FT.	12 IN.	220 FT.
12	11/10/00	265 FT.	481 FT.	14 IN.	200 FT.
13	09/28/90	270 FT.	890 FT.	12 IN.	270 FT.
14	11/19/90	338 FT.	790 FT.	12 IN.	139 FT.
15	01/23/95	247 FT.	409 FT.	10 IN.	140 FT.
16	11/01/99	250 FT.	551 FT.	12 IN.	150 FT.
17	05/98	272 FT.	546 FT.	10 IN.	150 FT.
18	04/12/99	266 FT.	627 FT.	10 IN.	160 FT.
19	04/13/93	277 FT.	647 FT.	12 IN.	160 FT.
20	02/15/93	149 FT.	367 FT.	10 IN.	90 FT.
21	10/10/86	165 FT.	410 FT.	16 IN.	80 FT.
22		148 FT.	352 FT.	16 IN.	110 FT.
23	02/19/88	330 FT.	647 FT.	16 IN.	98 FT.
24	12/14/00	221 FT.	322 FT.	12 IN.	91 FT.
25	05/25/99	287 FT.	506 FT.	10 IN.	120 FT.
26	09/28/98	307 FT.	551 FT.	16 IN.	138 FT.
27	01/19/99	319 FT.	555 FT.	16 IN.	120 FT.

<u>WELL NO.</u>	<u>VIDEO DATE</u>	<u>CASING DEPTH</u>	<u>BORE DEPTH</u>	<u>CASING SIZE</u>	<u>PUMP SET</u>
28		235 FT.	500 FT.	18 IN.	150 FT.
29		311 FT.	620 FT.	12 IN.	110 FT.
30	05/19/93	327 FT.	484 FT.	14 IN.	90 FT.
31	07/24/98	340 FT.	490 FT.	16 IN.	100 FT.
32	01/10/95	193 FT.	307 FT.	12 IN.	110 FT.
33	03/17/99	260 FT.	354 FT.	6 IN.	140 FT.
34		110 FT.		8 IN.	110 FT.
35	02/02/90	287 FT.	512 FT.	12 IN.	80 FT.
36	04/27/93	325 FT.	600 FT.	10 IN.	80 FT.
37		368 FT.	558 FT.	18 IN.	121 FT.
38		270 FT.	480 FT.	16 IN.	150 FT.
39		270 FT.	480 FT.	6 IN.	110 FT.
40		360 FT.	600 FT.	6 IN.	105 FT.
41	03/00	300 FT.	696 FT.	10 IN.	130 FT.
42	12/14/94	260 FT.	517 FT.	20 IN.	200 FT.
Well @ Bacon					
Park Golf Course	01/30/01	268 FT.	546 FT.	12 IN.	130 FT.

:km

Revised - 02/05/01

WELL LOCATIONS  
CITY OF SAVANNAH

WELL #

- 1 WALZ DRIVE NEXT TO JULIETTE LOWE SCHOOL
- 2 STILES AVENUE & GWINNETT BEHIND CITY LOT
- 3 IN CITY LOT YARD
- 4 GWINNETT STREET AT WEST BOUNDARY AND I-16
- 5 IN CORNER OF WHITAKER ST. AND PARK AVENUE(FORSYTH PRK)
- 6 CORNELL AVENUE BETWEEN WATERS AVENUE AND B.C. SCHOOL (*correct*)
- 7 CORNER OF VICTORY DRIVE AND WATERS AVENUE (DAFFIN PK)
- 8 EDGEWOOD RD. & PIERPONT AVE.(GIRL SCOUT PK.-GORDONSTON
- 9 COLUMBUS DRIVE AND ABERCORN STREET
- 10 AUGUSTA AVENUE AT OLD WEST LATHROP AVENUE
- 11 PENNSYLVANIA AVE. AT HARRISON ST. BEHIND FIRE STATION
- 12 35TH STREET AND LINCOLN STREET
- 13 MONTGOMERY CROSSROADS AT BARTLETT SCHOOL
- 14 WINDSOR FOREST ON BRIARCLIFF CIRCLE OFF WINDSOR ROAD
- 15 WILSHIRE ESTATES ON LARGO DRIVE NEAR TIBET AVENUE
- 16 SOUTHEASTERN SHIPYARD-END OF WALSTROM ROAD
- 17 TRAVIS FIELD ACROSS FROM OLD AIRPORT TERMINAL
- 18 TRAVIS FIELD NEXT TO QUALITY COURTS MOTEL
- 19 TRAVIS FIELD AT EDGE OF RUNWAY BEHIND HANGAR BUILDING
- 20 DEAD END SAPELO ROAD-ISLANDWOOD (WILMINGTON ISLAND)

- 21 WELLINGTON CIRCLE OFF MILLWARD ROAD (WILMINGTON ISLAND)
- 22 WILMINGTON ISLAND ROAD - BEHIND HOUSE #918
- 23 OFF LARGO RD. JUST BEFORE BERKSHIRE WEST @ WATER TANK
- 24 OFF LEANING OAKS DR. - WOODRIDGE ESTATES(WILMINGTON ISLAND)
- 25 GAMBLE ROAD OFF ACL BLVD
- 26 COFFEE BLUFF AT COFFEE BLUFF ESTATES
- 27 BEHIND ST. JOSEPH'S HOSPITAL ON McAULEY DRIVE
- 28 BRYAN WOODS ROAD & HWY 80 (WHITEMARSH ISLAND)
- 29 GEORGETOWN - BARKSDALE DRIVE & RED FOX DRIVE
- 30 G-2 GEORGETOWN - END OF KING GEORGE BLVD. (VILLAGE GREEN)
- 31 CHATHAM PARKWAY - BESIDE SAVANNAH GAS OFFICE
- 32 JOHNNY MERCER BLVD. & HIGHWAY 80 - WHITEMARSH ISLAND
- 33 DUTCH ISLAND - HERB RIVER DRIVE BETWEEN 401 & 405
- 34 DUTCH ISLAND - KOLB DRIVE - BETWEEN 840 & 841
- 35 I-95 & 204 - BEHIND WAFFLE HOUSE - WEST OF I-95
- 36 I-95 & 204 - BEHIND SAVANNAH FESTIVAL OUTLET - EAST OF I-95
- 37 I-16 & DEAN FORREST ROAD - SAVANNAH QUARTERS
- 38 DUTCH ISLAND - DUTCH ISLAND DRIVE BET. VERDELL & TERRAPIN
- 39 BACKUP WELL TO #28 - 6" SUBMERSIBLE
- 40 BACKUP WELL TO #37 - 6" SUBMERSIBLE
- 41 SAVANNAH STATE COLLEGE - WHATLEY AND FALLIGANT AVENUE
- 42 ARGONIC ROAD OFF EISENHOWER - REPLACEMENT FOR WELL #6

System name	Source name	Status/usage	Lat. DMS	Lat. Deg.	Long. DMS	Long. Deg.
GARDEN CITY	WELL #1	FULL TIME/REGULAR	320648	32.11333	810912	-81.15333
GARDEN CITY	WELL #2	FULL TIME/REGULAR	320708	32.11889	810858	-81.14944
GARDEN CITY	WELL #3		320607	32.10194	810858	-81.14944
GARDEN CITY	WELL #4	FULL TIME/REGULAR	320526	32.09056	810902	-81.15056
GARDEN CITY	2406 HWY 80 WELL	FULL TIME/REGULAR				
POOLER	WELL #1	FULL TIME/REGULAR	320602	32.10056	811501	-81.25028
POOLER	WELL #2	FULL TIME/REGULAR	320647	32.11306	811437	-81.24361
POOLER	WELL #3	FULL TIME/REGULAR	320743	32.12861	811612	-81.27000
POOLER	WELL #4	FULL TIME/REGULAR	320743	32.12861	811615	-81.27083
POOLER	SAVANNAH I & D WATER SYSTEM	FULL TIME/REGULAR				
PORT WENTWORTH	WELL #1	FULL TIME/REGULAR	320916	32.15444	810946	-81.16278
PORT WENTWORTH	WELL #2	FULL TIME/REGULAR	320916	32.15444	810948	-81.16333
SAVANNAH-MAIN	WELL #1	FULL TIME/REGULAR	320130	32.02500	810447	-81.07972
SAVANNAH-MAIN	WELL #2	FULL TIME/REGULAR	320417	32.07139	810651	-81.11417
SAVANNAH-MAIN	WELL #3	FULL TIME/REGULAR	320414	32.07056	810643	-81.11194
SAVANNAH-MAIN	WELL #4	FULL TIME/REGULAR	320404	32.06778	810621	-81.10583
SAVANNAH-MAIN	WELL #5	FULL TIME/REGULAR	320352	32.06444	810549	-81.09694
SAVANNAH-MAIN	WELL #6 ← CAPPED		320027	32.00750	810531	-81.09194
SAVANNAH-MAIN	WELL #7	FULL TIME/REGULAR	320248	32.04667	810503	-81.08417
SAVANNAH-MAIN	WELL #8	FULL TIME/REGULAR	320322	32.05611	810400	-81.06667
SAVANNAH-MAIN	WELL #9	FULL TIME/REGULAR	320221	32.03917	810612	-81.10333
SAVANNAH-MAIN	WELL #10	FULL TIME/REGULAR	320525	32.09028	810745	-81.12917
SAVANNAH-MAIN	WELL #11	FULL TIME/REGULAR	320351	32.06417	810332	-81.05889
SAVANNAH-MAIN	WELL #12	FULL TIME/REGULAR	320318	32.05500	810558	-81.09944
SAVANNAH-MAIN	WELL #13	FULL TIME/REGULAR	315949	31.99694	810659	-81.11639
SAVANNAH-MAIN	WELL #14	FULL TIME/REGULAR	315825	31.97361	810826	-81.14056
SAVANNAH-MAIN	WELL #15	FULL TIME/REGULAR	315921	31.98917	810839	-81.14417
SAVANNAH-MAIN	WELL #16	FULL TIME/REGULAR	320433	32.07583	810257	-81.04917
SAVANNAH-MAIN	WELL #23	FULL TIME/REGULAR	315805	31.96806	810912	-81.15333
SAVANNAH-MAIN	WELL #25	FULL TIME/REGULAR	320221	32.03917	810853	-81.14806
SAVANNAH-MAIN	WELL #26	FULL TIME/REGULAR	315628	31.94111	810856	-81.14889
SAVANNAH-MAIN	WELL #27	FULL TIME/REGULAR	315910	31.98611	810919	-81.15528
SAVANNAH-MAIN	WELL #31	FULL TIME/REGULAR				
SAVANNAH-MAIN	WELL #41	FULL TIME/REGULAR				
SAVANNAH-MAIN	AGONIC ROAD WELL (#42)	FULL TIME/REGULAR				
SAVANNAH-I & D	ABERCORN CREEK	FULL TIME/REGULAR	321520	32.25556	811040	-81.17778
SAVANNAH-I & D	WELL #17	EMERGENCY/BACK-UP	320710	32.11944	811136	-81.19333

SAVANNAH-I & D	WELL #18	EMERGENCY/BACK-UP	320705	32.11806	811140	-81.19444
SAVANNAH-I & D	WELL #19	EMERGENCY/BACK-UP	320731	32.12528	811140	-81.19444
TYBEE ISLAND	WELL #1	FULL TIME/REGULAR	320040	32.01111	805030	-80.84167
TYBEE ISLAND	WELL #2	FULL TIME/REGULAR	315940	31.99444	805049	-80.84694
TYBEE ISLAND	WELL #3	FULL TIME/REGULAR	320124	32.02333	805059	-80.84972
THUNDERBOLT	RIVER DR WELL	FULL TIME/REGULAR	320149	32.03028	810258	-81.04944
THUNDERBOLT	FIRE DEPT WELL	EMERGENCY/BACK-UP	320158	32.03278	810306	-81.05167
THUNDERBOLT	CITY HALL WELL	FULL TIME/REGULAR				
SAVANNAH CHRISTIAN PREI	WELL #1	FULL TIME/REGULAR	320422	32.07278	810947	-81.16306
SAVANNAH CHRISTIAN PREI	WELL #2	FULL TIME/REGULAR	320428	32.07444	810952	-81.16444
SAVANNAH-GATEWAY	WELL #35	FULL TIME/REGULAR	315600	31.93333	811400	-81.23333
SAVANNAH-GATEWAY	WELL #36	FULL TIME/REGULAR	315500	31.91667	811430	-81.24167
GOLDEN ISLES SUBDIVISION	WELL #1	FULL TIME/REGULAR	320127	32.02417	805803	-80.96750
GROVE HILL SUBDIVISION	WELL #1	FULL TIME/REGULAR	315929	31.99139	811322	-81.22278
AZALEA MOBILE HOME PLAZ	WELL #1	FULL TIME/REGULAR	320235	32.04306	811049	-81.18028
AZALEA MOBILE HOME PLAZ	WELL #2	FULL TIME/REGULAR	320235	32.04306	811049	-81.18028
AZALEA MOBILE HOME PLAZ	WELL #3	FULL TIME/REGULAR	320235	32.04306	811049	-81.18028
WATER'S BLUFF MOBILE HC	WELL #1	FULL TIME/REGULAR	315247	31.87972	810609	-81.10250
BLOOMINGDALE	WELL #1	FULL TIME/REGULAR	320735	32.12639	811751	-81.29750
BLOOMINGDALE	WELL #2	FULL TIME/REGULAR	320801	32.13361	811809	-81.30250
CROSBY MOBILE ESTATES	WELL #1	FULL TIME/REGULAR	320140	32.02778	811125	-81.19028
CHEROKEE MOBILE HOME F	WELL #1	FULL TIME/REGULAR	320944	32.16222	811045	-81.17917
COTTONVALE ESTATES	WELL #1	FULL TIME/REGULAR	320135	32.02639	811314	-81.22056
DYCHES MOBILE ESTATES	WELL #1	FULL TIME/REGULAR	315929	31.99139	810927	-81.15750
EAST PINES SUBDIVISION	WELL #1	FULL TIME/REGULAR	320216	32.03778	810056	-81.01556
ESTILL HAMMOCK/SPANISH	ESTILL HAMMOCK WELL	FULL TIME/REGULAR	320037	32.01028	805150	-80.86389
ESTILL HAMMOCK/SPANISH	SPANISH HAMMOCK WELL	FULL TIME/REGULAR				
ATLANTIC WS-ARGYLE EST	WELL #1	FULL TIME/REGULAR	320336	32.06000	812106	-81.35167
GARDEN ACRES ESTATES	AGENCY BUILDING WELL	FULL TIME/REGULAR	320602	32.10056	811501	-81.25028
GARDEN ACRES ESTATES	TRUCK REPAIR WELL					
SAVANNAH-DUTCH ISLAND	WELL #33	FULL TIME/REGULAR	320033	32.00917	810225	-81.04028
SAVANNAH-DUTCH ISLAND	WELL #34	FULL TIME/REGULAR	320006	32.00167	810204	-81.03444
SAVANNAH-DUTCH ISLAND	WELL #38	FULL TIME/REGULAR				
GRAYS SUBDIVISION	WELL #1	FULL TIME/REGULAR	320247	32.04639	810035	-81.00972
HARBOUR CREEK SUBDIVIS	WELL #1	FULL TIME/REGULAR	320121	32.02250	805830	-80.97500
HARBOUR CREEK SUBDIVIS	WELL #2	FULL TIME/REGULAR	320106	32.01833	805831	-80.97528
HOLIDAY MOBILE PARK	WELL #1	FULL TIME/REGULAR	320258	32.04944	811116	-81.18778

THE LANDINGS SUBDIVISION WELL #1  
 THE LANDINGS SUBDIVISION WELL #2  
 THE LANDINGS SUBDIVISION WELL #3  
 THE LANDINGS SUBDIVISION WELL #4  
 LARCHMONT UTILITIES WELL #1  
 LARCHMONT UTILITIES WELL #2  
 NORTONS TRAILER PARK WELL #1  
 NORTONS TRAILER PARK WELL #2  
 ATLANTIC WS-OGEECHEE F WELL #1  
 ATLANTIC WS-OGEECHEE F WELL #2  
 PARKERSBURG SUBDIVISION WELL #1  
 PARKERSBURG SUBDIVISION WELL #2  
 PARKERSBURG SUBDIVISION WELL #3  
 ATLANTIC WS-PINE BARREN WELL #1  
 PINE FOREST SUBDIVISION WELL #1  
 PLANTATION INN MOBILE EST WELL #1  
 CHATHAM WC-RIO VISTA/BL WELL #1  
 CHATHAM WC-RIO VISTA/BL WELL #2  
 CHATHAM WC-RIO VISTA/BL WELL #3  
 RIVER OAKS SUBDIVISION WELL #1  
 SKIDAWAY MOBILE ESTATE WELL #1  
 SKIDAWAY MOBILE ESTATE WELL #2  
 SOUTHSIDE MOBILE ESTATE WELL #1  
 SOUTHWINDS COMMUNITY WELL #1  
 SAVANNAH PINES MHP WELL #1  
 TALAHY ISLAND COMMUNITY TALAHY ISLAND WELL #1  
 TALAHY ISLAND COMMUNITY TALAHY ISLAND WELL #2  
 TALAHY ISLAND COMMUNITY TALAHY ISLAND WELL #3  
 TALAHY ISLAND COMMUNITY TALAHY ISLAND WELL #4  
 TALAHY ISLAND COMMUNITY TALAHY LAKE ESTS WELL  
 TALAHY ISLAND COMMUNITY TWELVE OAKS WELL  
 THE BLUFF SUBDIVISION WELL #1  
 VICKS MOBILE HOME PARK WELL #1  
 WHITE OAKS SUBDIVISION WELL #1  
 SAVANNAH YACHT & COUNTRY WELL #1  
 SAVANNAH YACHT & COUNTRY WELL #2  
 FT. PULASKI NATL. MONT. F. WELL #1

FULL TIME/REGULAR	315643	31.94528	810159	-81.03306
FULL TIME/REGULAR	315611	31.93639	810222	-81.03944
FULL TIME/REGULAR	315345	31.89583	810315	-81.05417
FULL TIME/REGULAR				
FULL TIME/REGULAR	320117	32.02139	811408	-81.23556
FULL TIME/REGULAR	320154	32.03167	811516	-81.25444
FULL TIME/REGULAR	320221	32.03917	811101	-81.18361
FULL TIME/REGULAR	315905	31.98472	811524	-81.25667
FULL TIME/REGULAR	315929	31.99139	811508	-81.25222
FULL TIME/REGULAR	315908	31.98556	810300	-81.05000
EMERGENCY/BACK-UP	315900	31.98333	810310	-81.05278
EMERGENCY/BACK-UP	315907	31.98528	810302	-81.05056
FULL TIME/REGULAR	320537	32.09361	812044	-81.34556
FULL TIME/REGULAR	321206	32.20167	811141	-81.19472
FULL TIME/REGULAR	320228	32.04111	811118	-81.18833
FULL TIME/REGULAR	315542	31.92833	810510	-81.08611
FULL TIME/REGULAR	315542	31.92833	810530	-81.09167
FULL TIME/REGULAR				
FULL TIME/REGULAR	320127	32.02417	805742	-80.96167
FULL TIME/REGULAR	315715	31.95417	810546	-81.09611
FULL TIME/REGULAR				
FULL TIME/REGULAR	315941	31.99472	810908	-81.15222
FULL TIME/REGULAR	320027	32.00750	805727	-80.95750
FULL TIME/REGULAR	320411	32.06972	811117	-81.18806
FULL TIME/REGULAR	320215	32.03750	805818	-80.97167
FULL TIME/REGULAR	320155	32.03194	805803	-80.96750
FULL TIME/REGULAR				
FULL TIME/REGULAR	320148	32.03000	805823	-80.97306
FULL TIME/REGULAR	320148	32.03000	805839	-80.97750
FULL TIME/REGULAR	320344	32.06222	810158	-81.03278
FULL TIME/REGULAR	315936	31.99333	810914	-81.15389
FULL TIME/REGULAR	320108	32.01889	805824	-80.97333
FULL TIME/REGULAR	320126	32.02389	810033	-81.00917
FULL TIME/REGULAR				
FULL TIME/REGULAR	320135	32.02639	805330	-80.89167

HERCULES INC. WELL #1	FULL TIME/REGULAR	320513	32.08694	810840	-81.14444
BUILDING MATERIALS MANU WELL #1	FULL TIME/REGULAR	320646	32.11278	810758	-81.13278
NATIONAL GYPSUM OF GEC WELL #1	FULL TIME/REGULAR	320652	32.11444	810748	-81.13000
USA-HUNTER AF 702 RADEF WELL #4A	FULL TIME/REGULAR	320056	32.01556	810955	-81.16528
UGA-SKIDAWAY OCEANOGEF WELL #1	FULL TIME/REGULAR	315914	31.98722	810111	-81.01972
MORGAN MOBILE HOME PAI WELL #1	FULL TIME/REGULAR	320606	32.10167	811927	-81.32417
MORGAN MOBILE HOME PAI WELL #2		320625	32.10694	811925	-81.32361
MELODY ACRES PARK WELL #1	FULL TIME/REGULAR	320046	32.01278	811410	-81.23611
MELODY ACRES PARK WELL #2	FULL TIME/REGULAR				
SAVANNAH-GEORGETOWN WELL #29	FULL TIME/REGULAR	315845	31.97917	811335	-81.22639
SAVANNAH-GEORGETOWN WELL #30	FULL TIME/REGULAR	315924	31.99000	811224	-81.20667
MEMORIAL MEDICAL CENTE WELL #1	FULL TIME/REGULAR	320144	32.02889	810514	-81.08722
ATLANTIC WS-OLIVER PINE: WELL #1	FULL TIME/REGULAR	320258	32.04944	812025	-81.34028
OLD FORT JACKSON MUSEI WELL #1	FULL TIME/REGULAR	320444	32.07889	810204	-81.03444
DNR-SKIDAWAY IS. STATE F WELL #1	FULL TIME/REGULAR	315709	31.95250	810300	-81.05000
NASSAU WOODS MOBILE H: WELL #1	FULL TIME/REGULAR	320441	32.07806	811116	-81.18778
COMMODORE POINT WELL #1	FULL TIME/REGULAR	320140	32.02778	810024	-81.00667
DERENNE PLAZA CONDO WELL #1	FULL TIME/REGULAR	320405	32.06806	810611	-81.10306
WHITEMARSH ESTATES WELL #1	FULL TIME/REGULAR	320229	32.04139	805935	-80.99306
OATLAND ISLAND EDUCATIO WELL #1	FULL TIME/REGULAR	320256	32.04889	810117	-81.02139
CHATHAM CO.-RUNAWAY P: WELL #1	FULL TIME/REGULAR	320346	32.06278	810220	-81.03889
ENNIS MOBILE HOME PARK WELL #1	FULL TIME/REGULAR	315854	31.98167	810442	-81.07833
CHATHAM CO.-MONTGOMEI WELL #1	FULL TIME/REGULAR	315654	31.94833	810639	-81.11083
CHATHAM CO.-MONTGOMEI WELL #2	FULL TIME/REGULAR	315636	31.94333	810620	-81.10556
CHATHAM CO.-MONTGOMEI WELL #3		315636	31.94333	810620	-81.10556
BETHESDA HOME FOR BOY: WELL #1	FULL TIME/REGULAR	315724	31.95667	810543	-81.09528
BETHESDA HOME FOR BOY: WELL #2	FULL TIME/REGULAR	315733	31.95917	810530	-81.09167
LAKESIDE MOBILE HOME PA WELL #1	FULL TIME/REGULAR	320222	32.03944	810908	-81.15222
WHITFIELD PARK SUBDIVISI WELL #1	FULL TIME/REGULAR	315724	31.95667	810627	-81.10750
WHITFIELD PARK SUBDIVISI WELL #2	FULL TIME/REGULAR	315705	31.95139	810652	-81.11444
USA-HUNTER ARMY AIRFIEL WELL #1	FULL TIME/REGULAR	320109	32.01917	810747	-81.12972
USA-HUNTER ARMY AIRFIEL WELL #2	FULL TIME/REGULAR	320139	32.02750	810806	-81.13500
CHATHAM CO.-GLEN OF ROI WELL #1	FULL TIME/REGULAR	315939	31.99417	810410	-81.06944
CHATHAM CO.-GLEN OF ROI WELL #2	FULL TIME/REGULAR	315934	31.99278	810342	-81.06167
CHATHAM CO.-GLEN OF ROI WELL #3	FULL TIME/REGULAR	315858	31.98278	810351	-81.06417
CHATHAM CO.-GLEN OF ROI WELL #4	FULL TIME/REGULAR	315952	31.99778	810408	-81.06889
CHATHAM CO.-GLEN OF ROI WELL #5		315952	31.99778	810359	-81.06639

FOSS MOBILE HOME PARK WELL #1  
 LIVE OAK MOBILE HOME PAI WELL #1  
 SHADY ACRES MOBILE HOM WELL #1  
 SHADY ACRES MOBILE HOM WELL #2  
 GROVE POINT MOBILE EST. WELL #1  
 BELLAIRE VILLAGE SUBDIVI WELL #1  
 BEAULIEU VILLAGE SUBDIVI WELL #1  
 DERRICK SUBDIVISION WELL #1  
 CHATHAM CO.-LITTLE NECK WELL #1  
 MILLER PINES MOBILE HOM WELL #1  
 CHATHAM CO.-MODENA ON WELL #1  
 CHATHAM CO.-BURROUGHS WELL #1  
 CANDLER GENERAL HOSPIT WELL #1  
 CANDLER GENERAL HOSPIT SAVANNAH WATER SYSTEM  
 MARTY'S FRIED CHICKEN WELL #1  
 CHATHAM CO.-WEST CHAT WELL #1  
 WILMINGTON ISL. WS, INC. WELL #1  
 C & S MOBILE ESTATES WELL #1  
 BARNWELL GARDENS SUBC WELL #1  
 BASHLORS MOBILE HOME P WELL #1  
 HEATHCOTE FARMS SUBDI WELL #1  
 WHITFIELD MOBILE ESTATE WELL #1  
 LIBERTY INN WELL #1  
 SAVANNAH MOTOR LODGE WELL #1  
 RIVERVIEW MOBILE INN WELL #1  
 RIVERVIEW MOBILE INN WELL #2  
 BELLAIRE WOODS CAMPGR WELL #2  
 SAVANNAH GOLF CLUB WELL #1  
 ATLANTIC WS-RIVERSIDE E WELL #1  
 SEABREEZE MOBILE HOME WELL #1  
 THUNDERBIRD MOTEL WELL #1  
 WILMINGTON ISLAND CLUB WELL #1  
 ROGER WOOD PACKING CC WELL #1  
 TEDDERS MOTEL WELL #1  
 SAVANNAH STEEL INC. WELL #1  
 SASSER'S SEAFOOD INC. WELL #1  
 GEORGIA PACIFIC-SAV. PLY WELL #1

FULL TIME/REGULAR	320053	32.01472	811418	-81.23833
FULL TIME/REGULAR	320458	32.08278	811141	-81.19472
FULL TIME/REGULAR	320056	32.01556	811408	-81.23556
FULL TIME/REGULAR	320056	32.01556	811408	-81.23556
FULL TIME/REGULAR	315917	31.98806	811354	-81.23167
FULL TIME/REGULAR	320137	32.02694	811917	-81.32139
FULL TIME/REGULAR	315612	31.93667	810621	-81.10583
FULL TIME/REGULAR	320204	32.03444	811251	-81.21417
FULL TIME/REGULAR	320026	32.00722	811522	-81.25611
FULL TIME/REGULAR	320538	32.09389	811714	-81.28722
FULL TIME/REGULAR	315925	31.99028	810108	-81.01889
FULL TIME/REGULAR	315806	31.96833	811426	-81.24056
FULL TIME/REGULAR	320144	32.02889	810553	-81.09806
FULL TIME/REGULAR				
FULL TIME/REGULAR	320234	32.04278	811057	-81.18250
FULL TIME/REGULAR	320506	32.08500	811448	-81.24667
FULL TIME/REGULAR	320215	32.03750	805840	-80.97778
FULL TIME/REGULAR	320953	32.16472	811056	-81.18222
FULL TIME/REGULAR	320958	32.16611	811058	-81.18278
FULL TIME/REGULAR	320505	32.08472	811152	-81.19778
FULL TIME/REGULAR	320236	32.04333	811020	-81.17222
FULL TIME/REGULAR	315715	31.95417	810635	-81.10972
FULL TIME/REGULAR	320256	32.04889	810910	-81.15278
FULL TIME/REGULAR	315600	31.93333	811400	-81.23333
FULL TIME/REGULAR	315630	31.94167	810714	-81.12056
	315632	31.94222	810714	-81.12056
FULL TIME/REGULAR	320121	32.02250	811917	-81.32139
FULL TIME/REGULAR	320402	32.06722	810352	-81.06444
FULL TIME/REGULAR	320430	32.07500	812214	-81.37056
FULL TIME/REGULAR	320109	32.01917	811424	-81.24000
FULL TIME/REGULAR	320257	32.04917	810913	-81.15361
FULL TIME/REGULAR	320012	32.00333	805958	-80.99944
FULL TIME/REGULAR	320520	32.08889	810830	-81.14167
FULL TIME/REGULAR	320259	32.04972	810912	-81.15333
FULL TIME/REGULAR	320531	32.09194	811204	-81.20111
FULL TIME/REGULAR	320049	32.01361	805917	-80.98806
FULL TIME/REGULAR	320550	32.09722	811038	-81.17722

GEORGIA PACIFIC-SAV PLY/AUXILIARY WELL

SOUTHERN LNG INC. WELL #1  
 SOUTHERN LNG INC. WELL #2  
 THE TRAVELER'S INN WELL #1  
 SANDMAN MOTEL WELL #1  
 LOVE'S FISHING CAMP RES WELL #1  
 SAVANNAH YACHT CLUB WELL #1  
 COASTAL EQUITIES INC.NO. WELL #1  
 COASTAL EQUITIES INC.NO. WELL #1  
 CROSBY MOBILE ESTATES I WELL #1  
 FORT PULASKI NATIONAL M WELL #1  
 FT. PULASKI NATL. MONT. P WELL #1  
 SAVANNAH-WILMINGTON IS WELL #20  
 SAVANNAH-WILMINGTON IS WELL #21  
 SAVANNAH-WILMINGTON IS WELL #22  
 SAVANNAH-WILMINGTON IS WELL #24  
 USA-HUNTER AF HORSE ST. WELL #5  
 USA-HUNTER AF LOTTS ISL ISLAND WELL #7  
 USA-HUNTER AF REC AREA WELL #3  
 USA-HUNTER AF AMMO/MOIMOLE HOLE WELL #8  
 DEAN FOREST ROAD TRAILI WELL #1  
 DOT-REST AREA/WELCOME WELL #1  
 CHATHAM CO-SAV PORT AL WELL #1  
 CHATHAM CO-SAV PORT AL WELL #2  
 CHATHAM CO-SAV PORT AL POOLER WATER SYSTEM  
 ISLANDS EXPRESSWAY REC WELL #1  
 DEAN FOREST CHEVRON WELL #1  
 ST. PETER THE APOSTLE SC WELL #1  
 ARGYLE VILLAGE SUBDIVISI WELL #1  
 SAVANNAH-WHITEMARSH IS WELL #28  
 SAVANNAH-WHITEMARSH IS WELL #32  
 SAVANNAH-WHITEMARSH IS WELL #39  
 T.E. SHURLING REAL ESTAT WELL #1  
 RIVERBLUFF SUBDIVISION WELL #1  
 AIRPORT OFFICES & INDUS WELL #1  
 ATLANTA WOOD INDUSTRIE WELL #1  
 SAVANNAH-SAVANNAH QUA WELL #37

EMERGENCY/BACK-UP

FULL TIME/REGULAR	320414	32.07056	805956	-80.99889
FULL TIME/REGULAR				
FULL TIME/REGULAR	320201	32.03361	811256	-81.21556
FULL TIME/REGULAR	315606	31.93500	811406	-81.23500
FULL TIME/REGULAR	315843	31.97861	811715	-81.28750
FULL TIME/REGULAR	320105	32.01806	810106	-81.01833
FULL TIME/REGULAR	320313	32.05361	810842	-81.14500
FULL TIME/REGULAR	320308	32.05222	810839	-81.14417
FULL TIME/REGULAR	320241	32.04472	811142	-81.19500
FULL TIME/REGULAR	320136	32.02667	805323	-80.88972
FULL TIME/REGULAR	320149	32.03028	805358	-80.89944
FULL TIME/REGULAR	320040	32.01111	805836	-80.97667
FULL TIME/REGULAR	315929	31.99139	805920	-80.98889
FULL TIME/REGULAR	315938	31.99389	805913	-80.98694
FULL TIME/REGULAR	320020	32.00556	805809	-80.96917
FULL TIME/REGULAR	315956	31.99889	811101	-81.18361
FULL TIME/REGULAR	315916	31.98778	811102	-81.18389
FULL TIME/REGULAR	315957	31.99917	810907	-81.15194
FULL TIME/REGULAR	315959	31.99972	811016	-81.17111
FULL TIME/REGULAR	320308	32.05222	811236	-81.21000
FULL TIME/REGULAR	321241	32.21139	811025	-81.17361
FULL TIME/REGULAR	320658	32.11611	811318	-81.22167
FULL TIME/REGULAR	320635	32.10972	811312	-81.22000
FULL TIME/REGULAR	320634	32.10944	811316	-81.22111
FULL TIME/REGULAR	320331	32.05861	810119	-81.02194
FULL TIME/REGULAR	320520	32.08889	811110	-81.18611
FULL TIME/REGULAR	320040	32.01111	805749	-80.96361
FULL TIME/REGULAR	320220	32.03889	810430	-81.07500
FULL TIME/REGULAR	320207	32.03528	805926	-80.99056
FULL TIME/REGULAR	320207	32.03528	805926	-80.99056
EMERGENCY/BACK-UP				
FULL TIME/REGULAR	320211	32.03639	811250	-81.21389
FULL TIME/REGULAR				
FULL TIME/REGULAR	320445	32.07917	811540	-81.26111
FULL TIME/REGULAR	320800	32.13333	810830	-81.14167
FULL TIME/REGULAR	320425	32.07361	811335	-81.22639

SAVANNAH-SAVANNAH QUA WELL #40  
SPEEDWAY #38 WELL #1  
USCG-TYBEE STATION WELL #1  
SAVANNAH BEND MARINA WELL #1  
B'DETTE MOBILE BLUFF WELL #1  
SANDY BLUFF SUBDIVISION WELL #1  
MORGAN MOBILE HOME CO WELL #1  
PINELAND CHRISTIAN ACAD WELL #1  
D HOFFMAN SUBWAY REST. WELL #1  
DEAN FOREST RD.TP-NORT WELL #1  
CUSSETA SANDY STREET WELL

FULL TIME/REGULAR  
FULL TIME/REGULAR  
FULL TIME/REGULAR  
FULL TIME/REGULAR  
FULL TIME/REGULAR  
FULL TIME/REGULAR  
FULL TIME/REGULAR  
FULL TIME/REGULAR  
FULL TIME/REGULAR  
FULL TIME/REGULAR

320420 32.07222 811215 -81.20417

320258 32.04944 810931 -81.15861

321806 32.30167 844635 -84.77639

U.S. EPA REGION IV

# SDMS

## Unscannable Material Target Sheet

DocID: 10724 711 Site ID: GAD580803656

Site Name: Katey Construction Co.

### Nature of Material:

Map: ☒

Computer Disks: ☐

Photos: ☐

CD-ROM: ☐

Blueprints: ☐

Oversized Report: ☐

Slides: ☐

Log Book: ☐

Other (describe): City of Savannah Water Wells

Amount of material: \_\_\_\_\_

\* Please contact the appropriate Records Center to view the material \*

## RECORD OF TELEPHONE CONVERSATION

Date: 7/16/01	Project Number: GAD003293057
Name: David L. Brown - Tetra Tech EM Inc Initiated Call ( X ) Returned Call ( ) Received Call ( ) Title: Environmental Scientist Time: 1515 Signature: <i>DL Brown</i>	Contacted: A.J. Oumgwitz Title: Agency: Georgia Department of Natural Resources -Environmental Protection Div. Address: Savannah, Georgia  Telephone: (912) 353-3225
Subject: Surficial Aquifer Usage in Savannah, Georgia	
<b>TELECON SUMMARY</b>	
<p>I Spoke to Mr. Oumgwitz who stated that all municipal and community wells in the Savannah area are completed in the Floridan Aquifer. He stated that he was unaware of any private residences in the area with wells that are installed in the surficial aquifer. He said that the Savannah field office does not keep records for private residential wells.</p>	
<b>RESPONSE REQUIRED</b>	
( X ) None    ( ) Phone call    ( ) Memo    ( ) Letter    ( ) Report	
cc: File ( X )    Project Manager ( )    Principal Investigator    Other (specify)	

TELEPHONE CONTACT SUMMARY  
DYNAMAC CORPORATION

CALL MADE BY: Susan L. Rusher REGION: IV  
Dynamac Corporation SITE: Latex  
*Susan L. Rusher 9/15/92* Construction

DATE: September 15, 1992 CERCLIS NO. GAD980803696  
TIME: 1:30 pm

PERSON CONTACTED:	NAME	Jeanna Gore
	TITLE	Cooperative Statistics Coordinator
	PHONE	1-912-264-7218
	ORGANIZATION	Georgia Department of Natural Resources, Coastal Resources Division, Commercial Fisheries.
	ADDRESS	Savannah, Georgia

GENERAL SUBJECT

Commercial Fish Landings in Wilmington and Savannah Rivers

CONVERSATION SUMMARY

Ms. Gore collects the commercial fish landings for the Georgia Coastal areas. She reports that there is a commercial Shad fishery on the Savannah River and there are from one to three commercial crabbers working the Wilmington River. The Wilmington River is a breeding ground for shrimp harvested offshore. She reports that trout, red drum, croaker, and the Shortnosed Sturgeon (which is endangered) are known to be in this area.

Reference 45

# Protected Animals of Georgia

NONGAME-ENDANGERED WILDLIFE PROGRAM  
GEORGIA DEPARTMENT OF NATURAL RESOURCES  
WILDLIFE RESOURCES DIVISION  
NONGAME WILDLIFE-NATURAL HERITAGE SECTION

**Georgia Department of Natural Resources**  
Lonice C. Barrett, Commissioner

**Wildlife Resources Division**  
David Waller, Director

**Nongame Wildlife-Natural Heritage Section**  
Michael J. Harris, Chief

**Nongame-Endangered Wildlife Program**  
Terry W. Johnson, Manager

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The Environmental Resources Network (TERN), Inc.,  
the friends group of the  
Nongame-Endangered Wildlife Program.

The opinions expressed in this book are those of the authors  
and do not necessarily reflect the policies of the  
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**See our World Wide Web site at:**  
**<http://www.dnr.state.ga.us>**

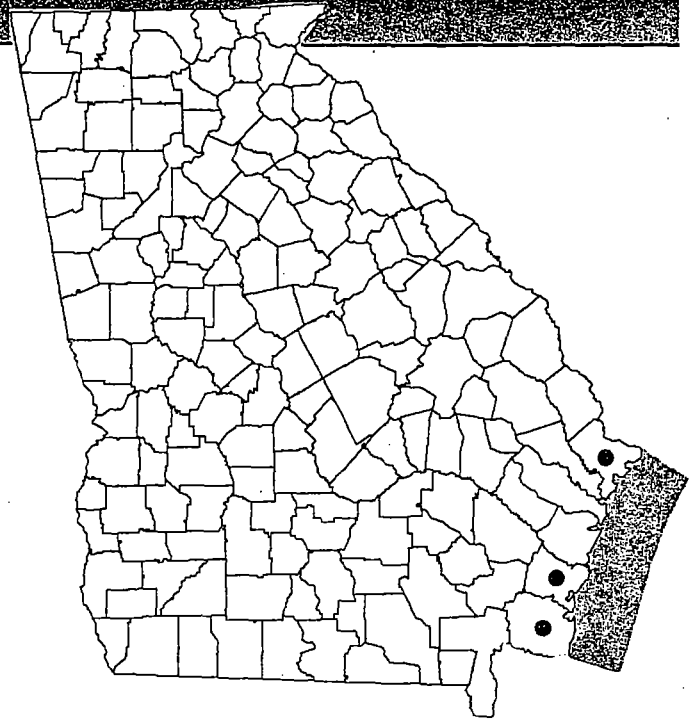
# NORTHERN RIGHT WHALE

**State Status:** Endangered  
**Federal Status:** Endangered

**Other Commonly Used Name(s):** North Atlantic right whale, black right whale, right whale

**Description:** North Atlantic right whales are baleen whales with a narrow upper jaw, strongly arched lower jaw, and a large head which can exceed one-fourth the total body length. Dark colored baleen plates descend from the upper jaw of right whales and are much longer than those of most other baleen whales, with lengths of up to almost 3 m (9.9 ft). These marine mammals are black skinned, although some individuals exhibit variably shaped white patches on their bellies and/or throats. Callosities, rough patches of skin that form unique patterns, are located on the top of each individual's head, upper portions of the lower lip, and chin. Light-colored cyamids, or whale lice, colonize the callosities, giving them a white appearance in stark contrast to the whale's black skin. The two widely spaced blow holes produce a distinctive V-shaped blow when viewed from directly in front of or behind the whale, which aids in identifying the species from a distance. Additional characteristic features include a broad, flat back, no dorsal fin, short paddle-shaped pectoral flippers, and broad deeply notched flukes with smooth trailing edges. Right whales are medium in length, but rotund in girth relative to other large whales. Adult right whales can grow up to almost 17 m (56 ft) and weigh up to 63,700 kg (70 tons). Females are larger than males. Newborn calves are approximately 4-5 m (13-16 ft) in length.

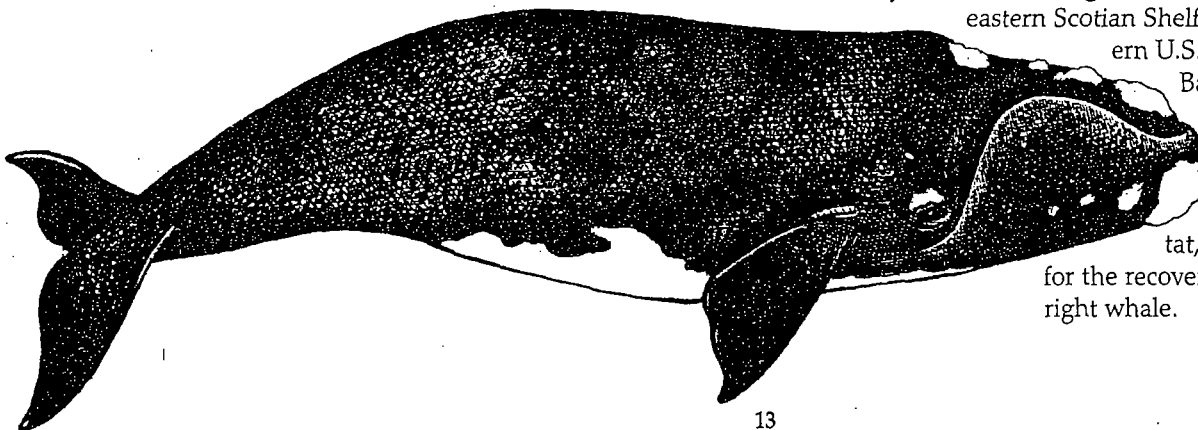
**Range and Habitat:** Right whales are found primarily in temperate waters, although they may also be found in subpolar and subtropical waters. Right whales use waters that are more coastal in nature than do other large whales. Two stocks of North Atlantic right whales may have existed at one time, one each in the eastern and western Atlantic Ocean.



*Shading indicates range  
Dots indicate counties with known occurrences (strandings)*

However, the population in the eastern Atlantic Ocean is very likely extinct. There are five areas known to be used frequently by right whales in the western North Atlantic, each of which is used at different times of the year and for varying purposes.

The coastal waters off Georgia and Florida serve as the world's only known calving area for North Atlantic right whales from December to late March. During this time, females and calves, as well as a few juveniles and males, occupy this area. Where the majority of the North Atlantic right whale population goes during the winter remains a mystery. In spring (March-May) right whales are found feeding in Cape Cod/Massachusetts Bay, which also serves as a nursery area for cow-calf pairs, or the Great South Channel, where mating activity also occurs. In summer and fall, cow-calf pairs are found farther north in the Bay of Fundy, while other segments of the North Atlantic right whale population may be found feeding or mating in waters of the southeastern Scotian Shelf. In 1994, the southeastern U.S. calving area, Cape Cod Bay, and the Great South Channel were designated by the National Marine Fisheries Service as "critical habitat," habitat that is critical for the recovery of the North Atlantic right whale.



**Diet:** Dense aggregations of copepods (crustaceans about one-third the size of a grain of rice); other crustaceans.

**Life History:** Although it is not known when males become sexually mature, females are thought to reach maturity at 5-7 years of age and give birth every 2-5 years to a single calf. Calves, typically born between January and March, may nurse for 9 months or more.

Courtship behavior, during which one female may attract several males, has been observed in spring and summer in their northern range. Socializing at the water's surface between a few to several individuals has been observed throughout their range and at all times of the year. Right whales have also been observed "breaching," or launching themselves head first out of the water. About two-thirds of the whale's body can be propelled out of the water before it lands with a tremendous splash on its side or back.

Right whales vocalize by emitting low-frequency bel- lows and pulses, mostly during social activities such as courtship. Right whales are considered to be relatively slow swimmers and average only 8 km/hr (5 mph). It is thought that the only natural predator of this species is the killer whale, although no attacks have been observed.

Unlike most species of baleen whales, right whales skim-feed by swimming along at the water's surface through swarms of copepods, with mouths agape and their upper jaw protruding out of the water. After straining enough organisms from the water, the whales use their large tongues to push the water out of their mouths between the baleen plates thereby leaving behind only their prey to swallow. When feeding underwater, right whales swim with their mouths slightly agape, allowing water and food organisms to enter and move through the baleen plates. The food items are trapped by the baleen and swallowed.

Northern right whales are the most endangered large whale in the world. The minimum population for northern right whales in the western North Atlantic is estimated to be 295 individuals. Information on northern right whales in other areas is lacking. Populations in the northeastern Atlantic and northeastern Pacific may no longer be viable, and only a few hundred individuals may still exist in the western North Pacific and Okhotsk Sea.

Annual peak numbers for Georgia and Florida are from January through March and average approximately 30 individuals. The greatest number of whales to be documented in the area during one season was 95 during the 1995-1996 season.

**Threats/Comments:** Vessel collisions and entanglement in fixed fishing gear are the greatest hindrances to the recovery of the northern right whale. Disturbance from intense whale watching activities in Cape Cod Bay and the Bay of Fundy might also threaten right whales and disperse dense patches of copepods upon which the whales are dependent for food.

### **Conservation and Management Recommendations:**

Right whales have been internationally protected from whal- ing since 1949 by legislation of the International Whaling Commission and are listed as endangered under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In the U.S., northern right whales are afforded additional protection under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.

Current conservation efforts are geared toward reduc- ing serious injury and mortality from ship strikes and entan- glement in fishing gear, and to minimize right whale distur- bance from vessels. Efforts to reduce ship collisions with right whales are spearheaded by regional teams in the southeastern and northeastern U.S. These efforts include educating mariners about the presence of right whales and encouraging the use of vessel operating procedures that may reduce the threat of ship strikes with whales, such as using minimal safe speeds, posting lookouts, and traveling the shortest distance possible through right whale critical habitats. It is illegal for a vessel of any size to knowingly approach within 455 m (500 yds) of a right whale unless the safety of the vessel is in dan- ger. As a safety precaution to right whales and other large whales, time and area restrictions have been placed on com- mercial fishing operations using fixed fishing gear. For instance, fishers may be required to use modified gear (e.g. fewer vertical lines on lobster pots, weak links in gill nets, etc.) in certain areas, or may not be allowed to fish at all in other areas important to right whales. It is illegal to use shark drift nets in and around the calving area critical habitat during the calving season.

### **Selected References:**

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*Written by Barb Zoodsma*

# HUMPBACK WHALE

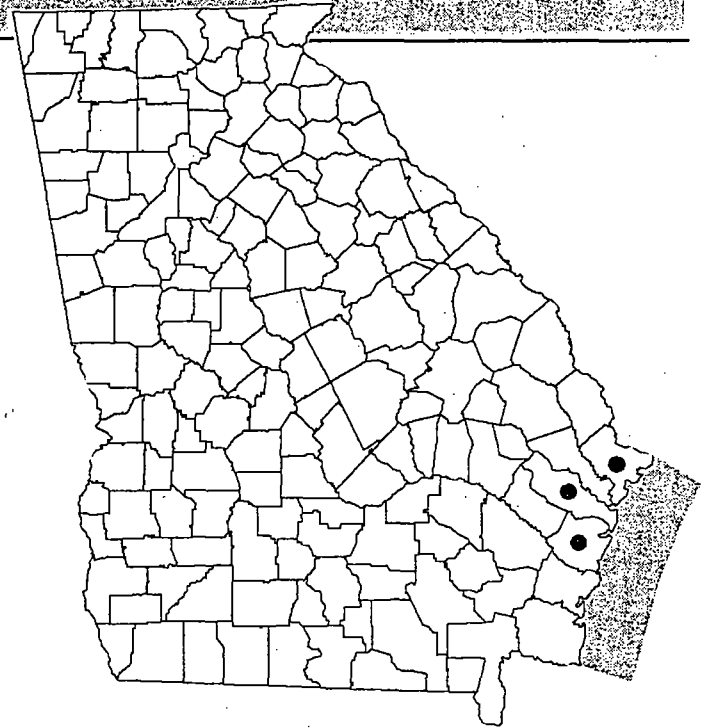
*Megaptera nooneangliae*

**State Status:** Endangered  
**Federal Status:** Endangered

**Other Commonly Used Name(s):** Hump-backed whale, humpback

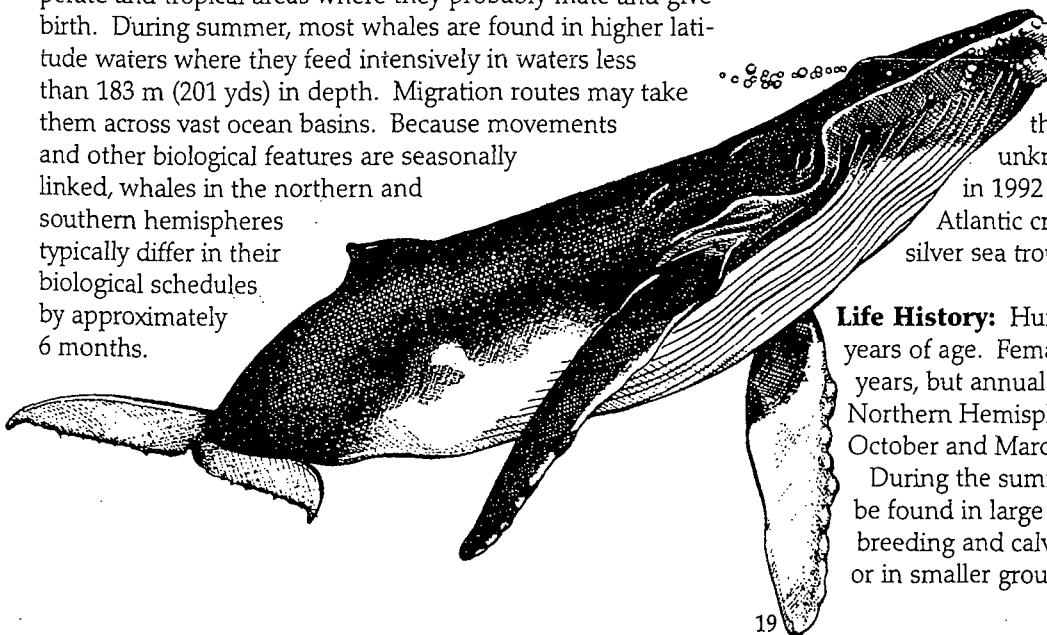
**Description:** Compared to other great whales, humpback whales are medium in size, attaining lengths of up to 15.25 m (50.3 ft) and weights of up to 27,300 kg (30 tons). Humpback whales have distinctive, elongated pectoral flippers that are up to one third of the whale's body length and exhibit irregular knobs along the leading edge. The small dorsal fin of the humpback is located approximately two thirds of the body length from the whale's snout, and fluke width is approximately one third its body length. Knobs and protuberances of various sizes are located on the margins of their upper and lower jaws and chin. Long ventral grooves extend from chin to navel. The baleen plates of humpback whales are blackish to gray in color with some lighter fibers and average approximately 70 cm (28 in) in length. Humpback whales are charcoal gray with lighter colored pectoral flippers. Perhaps the most characteristic feature of the humpback whale, besides the elongated pectoral flippers, is their elaborate, song-like vocalizations. Songs of humpback whales are considered to be the longest and perhaps most patterned in the animal kingdom. Each song can last up to 30 minutes and may be repeated for hours and sometimes days.

**Range and Habitat:** Humpback whales are found in all the world's oceans but are less common in arctic areas. The general distribution of humpbacks is seasonal. In winter, these whales seek out waters near coastal areas and islands in temperate and tropical areas where they probably mate and give birth. During summer, most whales are found in higher latitude waters where they feed intensively in waters less than 183 m (201 yds) in depth. Migration routes may take them across vast ocean basins. Because movements and other biological features are seasonally linked, whales in the northern and southern hemispheres typically differ in their biological schedules by approximately 6 months.



*Shading indicates range*  
*Dots indicate counties with known occurrences (strandings)*

The western North Atlantic stock of humpback whales includes whales using feeding areas in the Gulf of Maine, Gulf of St. Lawrence, Newfoundland and Labrador, western Greenland, and the Iceland-Denmark strait. Humpbacks inhabit these areas typically from April to November; their principle wintering areas are around the Greater and Lesser Antilles. Humpbacks have been observed off Georgia and Florida during the winter. The best estimate of the total population of humpback whales in the northern Atlantic Ocean west of Iceland from 1979 to 1990 is approximately 5,500 animals.



**Diet:** Primarily fish species such as herring, sand lance, and mackerel; also krill. A humpback that was found stranded dead from unknown causes on St. Catherines Island in 1992 had been feeding on banded drum, Atlantic croaker, spot, weakfish and silver sea trout.

**Life History:** Humpbacks are sexually mature at 4-6 years of age. Females typically give birth every 2-3 years, but annual births have been documented. In the Northern Hemisphere, calves are born between October and March. Females lactate for up to a year. During the summer feeding season, humpbacks can be found in large groups. However, during the winter breeding and calving season, whales are found alone or in smaller groups. Up to 19 mature males have been

observed bumping and shoving each other for access to a single female. In wintering areas, most mother and calf pairs are accompanied by a male escort.

Humpbacks use a variety of techniques to feed, but perhaps their most characteristic feeding technique is the use of bubble nets to concentrate prey. One or more humpback whales will dive below a school of fish or krill and ascend to the surface in a spiral around the prey while exhaling slowly. Prey species are entrapped in the center of the bubble net, and feeding humpbacks will lunge through the column engulfing the concentrated prey. As humpback whales feed and their mouths and throat pleats become distended with water and prey, their lower jaw unhinges, similar to snakes. Throat muscles are contracted to expel water through the baleen and consequently entrap their prey.

**Threats/Comments:** Historically, hunting (which was outlawed in the North Atlantic in 1955 and other oceans in 1966) resulted in a major decline in worldwide populations of humpback whales. Although humpbacks are no longer hunted, they continue to be affected by human activities. Entanglement in fishing gear is the leading cause of injuries and mortalities in humpback whales in cases where cause of injury or death can be determined. Most entanglements in the U.S. occur in the Northeast. Some humpbacks have been hit by ships. Biologists are concerned that acoustic disturbance from ships and other boats, habitat degradation from pollution and coastal development, and competition with humans for resources may all adversely affect humpback whales. Anglers in the Northeast have reportedly deployed fishing nets around feeding humpbacks in an effort to harvest fish that were being corralled by feeding humpbacks' bubble nets. In late 1987 and early 1988, 14 humpback whales were known to have died after feeding on Atlantic mackerel containing a dinoflagellate saxitoxin.

#### **Conservation and Management Recommendations:**

The National Marine Fisheries Service has produced a recovery plan for the humpback whale. The major recommendations of the plan are to protect habitats that are important to humpback whales, continue prohibition on commercial harvesting of humpbacks, reduce fishing gear entanglements, measure and monitor key humpback whale population parameters, and improve the administration and coordination of humpback whale recovery activities.

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*Written by Barb Zoodsma*

# WEST INDIAN MANATEE

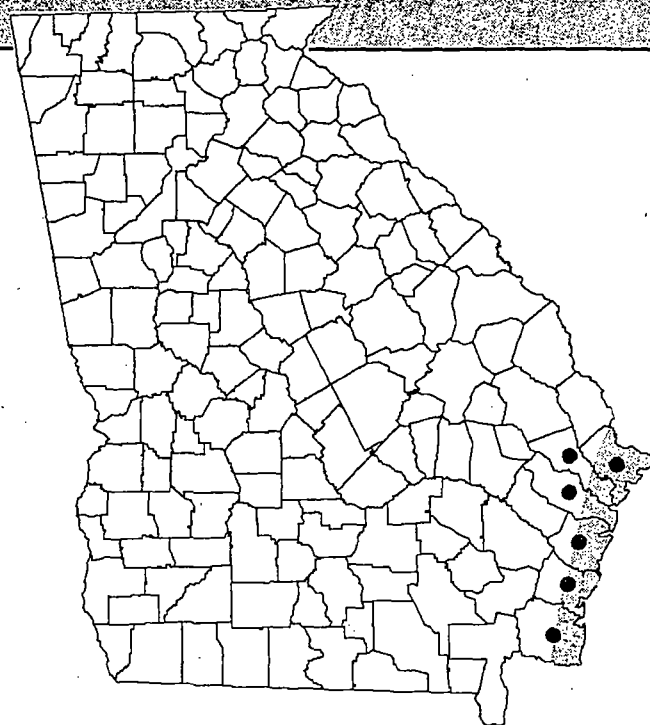
*Trichechus manatus*

**State Status:** Endangered  
**Federal Status:** Endangered

**Other Commonly Used Name(s):** Florida manatee, manatee, sea cow

**Description:** Manatees are robust aquatic mammals. Adults average 350 cm (138 in) in length and 1000 kg (2,200 lbs) in weight, but may grow to just over 400 cm (157 in) and weigh just more than 1600 kg (3,520 lbs). Newborn calves are approximately 1 m (3.3 ft) long and weigh approximately 30 kg (66 lbs). The thick skin is sparsely haired, ranges in color from slate gray to light brown, and often may be covered by algae and/or barnacles. The head is rounded and indistinct from the body. Stiff vibrissae (tactile hairs) are present around the small mouth, and two circular valvular nostrils are situated on the top of the muzzle. The eyes are small with a small lid and nictitating membrane, a clear inner eyelid that protects the eye. External ear flaps are absent. Manatee pectoral flippers are flexible and aid in moving over the substrate, maneuvering in the water column, scratching, food manipulation, and even embracing other manatees. The large tail is rounded and horizontally flattened.

**Range and Habitat:** The range of Florida manatees (*T. m. latirostris*) varies seasonally and is dictated by energy constraints. During the winter, manatees are found in natural or



Shading indicates range  
Dots indicate counties with known occurrences

artificial warm water sites in Florida. However, during the summer manatees are more dispersed and are common residents in Georgia from March through October. Occasional sightings have been reported north of Georgia with the known northernmost location from Rhode Island. Louisiana is considered the western limit of the manatee's range along the Gulf Coast. Manatees are found in riverine, estuarine, and marine environments. They often use feeding areas with access to deep channels, or in secluded locations, particularly in sounds or near the mouths of coastal rivers. In Georgia, manatees are found throughout coastal salt marshes and may venture into large, freshwater rivers as far west as Interstate Highway 95. Manatees only rarely venture into the open ocean.

**Diet:** Plants such as sea grasses, water hyacinth, and hydrilla. In Georgia, marsh grass, pickerel-weed, and several species of marine alga such as green alga, or sea lettuce, and red alga.

**Life History:** Manatees see fairly well and are sensitive to audible and tactile cues. They communicate with a variety of high-pitched squeaks and chirps. Semi-social, these marine mammals can be found alone or in groups of two or more. Individuals are not territorial; ranges often overlap, with male ranges ("circuits") being larger and encompassing several female ranges. Manatees often return to the same wintering and summering habitats year after year. Females reach sexual maturity by 5 years of age and males by age 3-4; life-span can be more than 50 years. Breeding usually takes place in mating herds formed when several males are attracted to a female in



estrus. Mating herds may remain together for a few days to over a month, during which as many as 20 males may compete intensely for access to the focal female. Calving intervals vary but minimally are 2-2.5 years unless a calf dies or a fetus is aborted. However, calving intervals may be considerably longer depending on many factors. Calves remain with their mothers, from whom they are thought to learn about available resources, for 1-2 years after birth. Manatees have slow metabolic rates, making individuals at the northern limit of this species' range susceptible to cold weather. Florida manatees adapt to this limitation behaviorally through seasonal migrations and prefer water that is 20 °C (68 °F) or warmer.

Currently, there is no reliable method to determine the population size of manatees in the southeastern U.S. Minimum population size is determined by censusing manatees at known warm water aggregation sites following severe cold fronts in winter. In 1996, the minimum population size was 2,639 individuals, according to Florida Department of Environmental Protection (FDEP).

**Threats/Comments:** Manatees have no natural predators; however, they suffer from naturally occurring phenomena. Manatees can succumb to cold stress, a prominent cause of mortality in some years. In 1989, FDEP reported 46 manatee deaths were attributed to cold weather. Another natural threat is red tide. In 1996, 149 manatee deaths were attributed to a red tide outbreak in southwestern Florida. To a lesser degree, manatees can also suffer from disease, parasites, and other non-human related injuries. The greatest human-related threat to manatees is that of vessel collision. In 1996, 60 manatees were known to have been killed as a result of vessel collisions; of these, 24 were killed from propeller-inflicted injuries, and 30 were killed as the result of impact injuries. A few manatees have been crushed in flood gates or canal locks. Habitat destruction is also a problem for manatees.

From 1987 to 1997, 25 manatees were found dead in Georgia; eight of these died as the result of human activities (3 were caught in shrimp trawls and 5 were struck by vessels), 6 died from natural causes, and the cause of death of the 11 remaining could not be determined.

**Conservation and Management Recommendations:** In Georgia, efforts are underway to identify areas used frequently by manatees. This information will be used to post informational signs in appropriate areas to alert boaters to the presence of manatees. Georgia's Coastal Zone Management Program will enhance funding available for public outreach efforts and encourage well-planned development along the Georgia coast. A long-term, photo-identification project has been initiated which may yield insights into the number of manatees using the coastal area of Georgia and potential shifts in those numbers.

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Written by Barb Zoodsma

# PIPING PLOVER

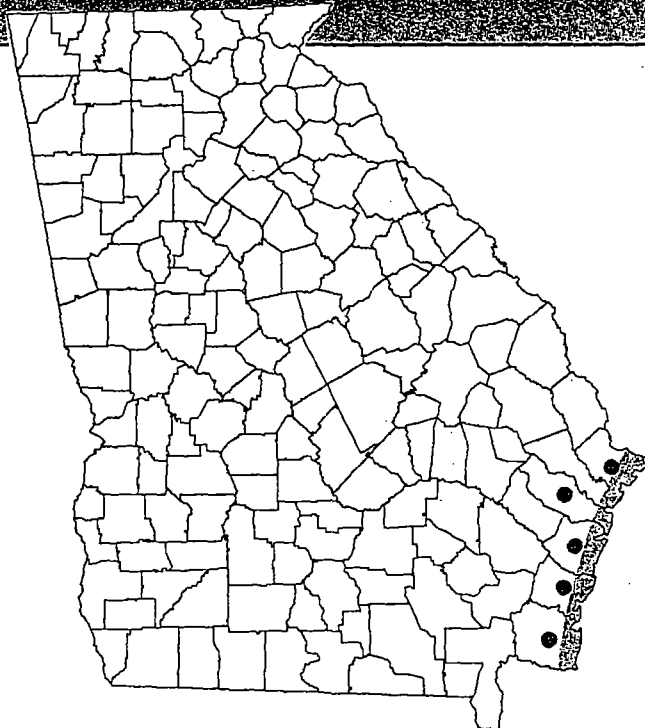
**State Status:** Threatened

**Federal Status:** Threatened in U.S. except the Great Lakes population, which is endangered

**Other Commonly Used Name(s):** Ringneck, sand plover, clam bird, mourning bird

**Description:** Piping plovers are about 17.5 cm (7 in) in length. The crown of the head, cheek, and back is a light, pallid, sandy-gray color, much like the color of beach sand. White on the forehead tapers into a white line that extends over the top of the eyes to the back of the head. The throat, breast, abdomen, and vent are white. The white of the throat extends around to the back of the neck as a thin collar. During breeding season, and often into winter, a black collar-like band occurs on the throat, and a black band extends over the top of the forehead from eye to eye. The bill is yellow to orange with a black tip, although sometimes completely black during winter. Legs are yellow to orange-yellow in color. A distinct white rump patch is visible during flight; other small plovers lack this distinctive field mark. The semipalmated plover (*Charadrius semipalmatus*) is similar in appearance but has a darker brown plumage on the head and back, and a wide brown or black collar on the neck. The snowy plover (*C. alexandrinus*) is very similar to the piping plover but has dark legs and is very rare in Georgia.

**Range and Habitat:** This species breeds in the northern Great Plains of the U.S. and Canada in alkali wetlands and along the larger rivers, on the beaches of Lake Superior and Lake Michigan, and on the northeast Atlantic coast from Newfoundland south to northern North Carolina.



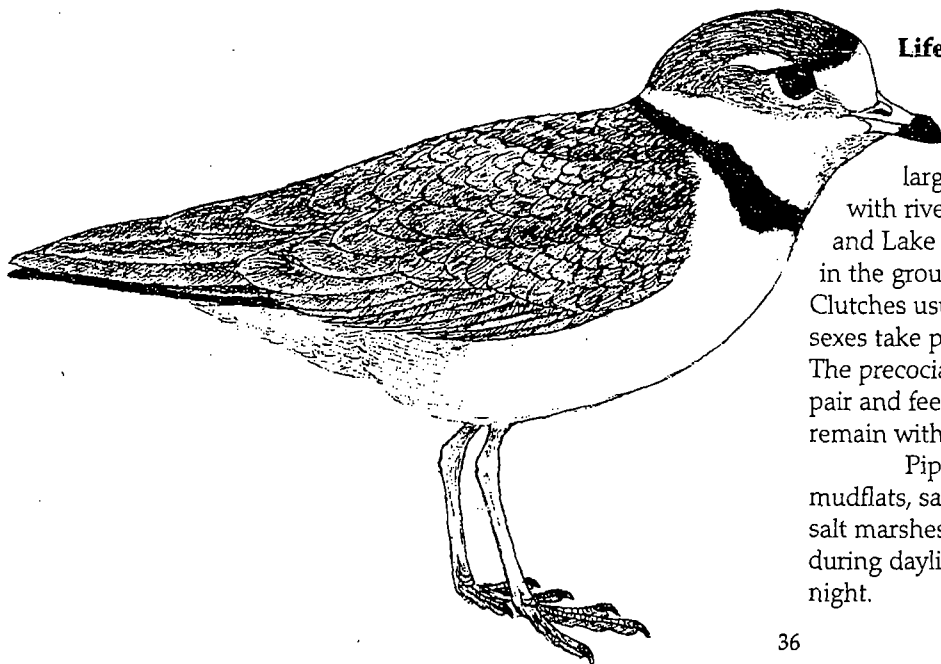
Shading indicates range  
Dots indicate counties with known occurrences

Wintering areas include the southeast Atlantic Coast from North Carolina to central Florida, the Gulf Coast from Florida to south Texas, portions of the Gulf Coast from south Texas to the Yucatan Peninsula, several Caribbean islands, and a small area along the northern Gulf of California. Barrier islands of Georgia and South Carolina are used as major wintering areas. Habitats include beaches, mudflats, sandflats, and tidal ponds that are periodically inundated by water from high tide.

**Diet:** Invertebrates, including marine worms, fly larvae, beetles, crustaceans and mollusks.

**Life History:** Along the Atlantic, nest sites include open sand, gravel, or shell-covered beaches or flats above the high tide line. Inland populations nest on sandy or gravel beaches adjacent to large alkali lakes, on beaches and sandflats associated with rivers, and on the gravel beaches of Lake Superior and Lake Michigan. The nest is a small depression scraped in the ground, lined with pebbles or small pieces of shells. Clutches usually consist of four eggs laid within 6 days. Both sexes take part in incubation, which lasts about 25-28 days. The precocial young are able to leave the nest with the adult pair and feed within a few hours of hatching. The young remain with the adults for approximately one month.

Piping plovers feed in intertidal areas of beaches, mudflats, sandflats, shorelines of coastal ponds, lagoons, and salt marshes. Most of their feeding activity is concentrated during daylight hours, but they have been known to feed at night.



**Threats/Comments:** The greatest threats to nesting piping plovers are loss of nesting habitat to beachfront development; destruction of adults, nests, and young by humans and vehicles; disturbance by humans and pets; and predation by wild, feral, and domesticated animals. Beach-front development often directly eliminates habitat, while associated activities such as construction of sea walls, jetties, and other beach stabilizing structures reduce the natural forces which maintain, renew, and create piping plover habitat. Inadvertent destruction occurs when nests or birds are stepped on or driven over. In addition, people, pets, and vehicles traveling in the vicinity of nests can lead to abandonment by the adult plovers.

Along the migratory pathway, and on the wintering grounds, loss of critical stopover and wintering sites can greatly reduce the survival rate of individuals by increasing the distance between "refueling" stops (stopover sites) and increasing competition with other piping plovers and shorebird species. These birds are also susceptible to disturbance by humans, pets, and vehicular traffic, which often cause repeated flushing, thus depleting vital fat reserves needed for successful migration.

Range-wide surveys of piping plovers were conducted in 1991 and 1996 during breeding season and in winter. Nesting pairs in the Atlantic (U.S. and Canada) numbered 938 (1991) and 1,241 (1996); in the Great Lakes, 17 (1991) and 21 (1996); in the Great Plains and Prairie (U.S. and Canada), 1,486 (1991) and 1,377 (1996). Winter surveys documented 178 (1991) and 283 (1996) individuals in the Atlantic; 3,206 (1991) and 2,416 (1996) in the Gulf of Mexico, 27 (1991) and 16 (1996) in Mexico, and 40 (1991) and 83 (1996) in the Caribbean.

Georgia's coast provides habitat for a significant number of the birds which winter on the Atlantic Coast. A total of 124 piping plovers were documented on Georgia beaches during a one-day 1996 survey; a similar survey in 1997 documented 123 piping plovers in Georgia, 42 of which were on Egg Island Bar. This is the greatest concentration seen on any of Georgia's barrier islands.

During the winter surveys in 1997 and 1998, 20 banded piping plovers originating from the Great Lakes region were confirmed from Georgia's coast. Since only 24 breeding pairs of the endangered Great Lakes population of piping plovers are known to exist, the barrier islands of Georgia, especially those within the Altamaha Delta, are a very significant wintering area for these birds.

#### **Conservation and Management Recommendations:**

On the breeding grounds this species has been protected by excluding people, pets, and vehicles from nesting areas during the breeding season. Wire enclosures have been used to protect nests from predators where predation is a problem. Entire public beaches have been closed in Massachusetts to protect nests and young from disturbance. Identifying and protecting important migratory stopover and wintering sites as well as the birds on these sites will ensure opportunities to breed in subsequent years.

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*Written by Todd M. Schneider*

# BALD EAGLE

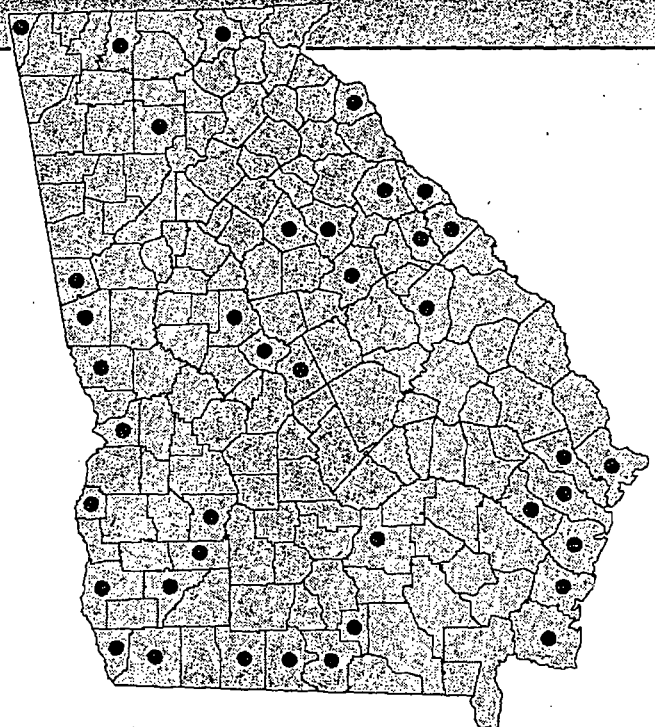
*Haliaeetus leucocephalus*

**State Status:** Endangered

**Federal Status:** Threatened

**Other Commonly Used Name(s):** American eagle, white-headed eagle, Washington eagle, white-headed sea eagle, black eagle

**Description:** Adult bald eagles are easily recognized by their familiar dark brown body and contrasting white head and tail. The bill, eyes, legs, and feet are yellow. Immature birds vary slightly in appearance depending on their age. They are generally dark brown with varying light patches, and the eyes and bill are dark. Full adult plumage is not attained until sexual maturity at about 5 years of age. The total length ranges from 76 to 109 cm (30-43 in), the wingspread from 182 to 249 cm (72-98 in), and the weight from 3.6 to 5.4 kg (8-12 lbs). Females are noticeably larger than males, and the average size of both sexes increases with latitude such that birds nesting in the northern states and Canada are significantly larger than birds nesting in southern states. Although there appears to be a continuous size gradient and no real genetic differences nor distinct breeding ranges, southern eagles are considered to be of the subspecies *H. l. leucocephalus* and northern eagles of the subspecies *H. l. alasensis*.



*Shading indicates range*

*Dots indicate counties with known nesting occurrences*

**Range and Habitat:** Bald eagles are found throughout most of the U.S. and Canada. They occur only in North America, which is one reason this bird was chosen as our national symbol over the golden eagle, which is found on other continents as well. Juvenile eagles and non-nesting adults can be seen throughout Georgia, but known nesting activity is concentrated mostly along the coast and near major rivers, wetlands, and reservoirs in the southern and central parts of the state. Like other members of the "fish eagle" group, bald eagles almost always nest near open water. The coastal area, including the barrier islands, marsh islands, and nearby mainland, has always provided good eagle nesting habitat historically and still supports the greatest population density. However, construction of reservoirs such as Seminole, Walter F. George, Oconee, Allatoona, Carters, Clarks Hill, Nottley and West Point, has increased suitable inland nesting habitat. Bald eagles prefer isolated sites for nesting but are adapting to the presence of human disturbance in some areas. The nest is usually in a large, open-topped pine near open water, often on high ground if available. Occasionally cypress trees are used.

**Diet:** Fish; waterfowl, particularly coots during eagle nesting season, and other birds; turtles; small mammals; and carrion.

**Life History:** Eagles form permanent pair bonds, but individuals will find another mate if the original is lost. They construct large stick nests in tall trees near water; used year after year, the nest can become quite large over time. Periodically, an eagle pair might construct and move into a new nest near the original one. In Georgia, courtship and nest-building typi-

cally occur in October and November. Two to three eggs are then laid in December or January and incubated for about 35 days. Both parents participate in incubation and caring for the 1-2 (rarely 3) young. The eaglets fledge at about 12 weeks, typically in late March or April, but they remain under parental care for several more weeks. Nesting chronology throughout the state varies by several weeks and seems to be dependent primarily upon the habits of individual pairs and secondarily upon latitude. Bald eagles do not reach maturity until their fifth year, when they attain their adult plumage characterized by the white head and tail. Sub-adult birds sometimes pair with adults but usually do not nest successfully. Many juvenile eagles from the southeastern U.S. migrate northward during their first summer and return before winter. A smaller proportion of older age-class juveniles head north each season. Adults from Georgia are essentially non-migratory, but they might wander away from the nesting area until the next nesting season.

**Threats/Comments:** Bald eagle populations in the U.S. had apparently begun to decline more than a century ago, probably due to predator control efforts and habitat alteration. In 1940, Congress passed the Bald Eagle Protection Act to help prevent extinction of our national symbol. However, overall numbers, and especially immature birds which indicate reproductive success, continued to drop. During the 1960s, most of the problems suffered by bald eagle populations, as well as several other species, were traced to the impacts of DDT (dichloro diphenyl trichloroethane), a pesticide that was widely used on agricultural and forest lands beginning in 1947. The chemical entered the eagles' food chain and killed some birds directly. Usually, however, it accumulated in the bodies of prey animals, and then in the eagles themselves where it impaired reproductive success. Use of DDT was outlawed in the U.S. in 1972, but it is still manufactured here and used elsewhere. Other persistent toxic chemicals such as PCBs, mercury, and other pesticides and herbicides, continue to pose potential threats to eagles and other wildlife. Additionally, some eagles are still being injured or killed by gunshot, and suitable nesting habitat is being lost. A recent threat is Avian Brain Lesion Syndrome, a mysterious disease that has killed eagles, coots, and ducks in Georgia, South Carolina, North Carolina, and Arkansas.

In Georgia, bald eagles were apparently fairly common along the coast up until the middle of this century. However, by the 1950s population declines had been detected. The decline continued until the last known successful nest was noted on St. Catherines Island in 1970. A few years following the DDT ban, an eagle pair again produced young at Ossabaw Island in 1981. Since then, the nesting population has grown and expanded as a result of the ban as well as other conservation and management efforts. As of 1999, there were 48 known occupied nesting territories in Georgia.

### Conservation and Management Recommendations:

Beginning in 1979 and continuing through 1995, a total of 89 young bald eagles were released in Georgia. The eaglets, which originated from captive breeding programs or wild nests elsewhere where the population was greater, were released at Sapelo Island and Butler Island on the coast and Lake Allatoona north of Atlanta. At least one of these released birds is known to have nested in South Carolina. Others might have nested in Georgia or elsewhere, but the identification bands can be very difficult to read without actually capturing the birds. All known eagle nests are monitored each year to determine occupancy, productivity, and management needs. New nests are found through reports from the public and through surveys of likely habitat. As both the human and eagle populations continue to increase, these two species will more frequently come into contact with each other. Continuing public education is necessary to ensure that attitudes and policy will be conducive to eagle survival. Ongoing environmental protection measures will be necessary to keep the history of the middle of this century from repeating itself. Resolution of management conflicts arising from eagle nests on private land will continue to be a high priority. The objective will be to protect the integrity of the nest site such that the pair will continue to produce young, while at the same time recommending as few management restrictions as is necessary to the landowner.

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Written by James C. Ozier

# GULL-BILLED TERN

*Sterna nilotica*

**State Status:** Threatened

**Federal Status:** Not Listed

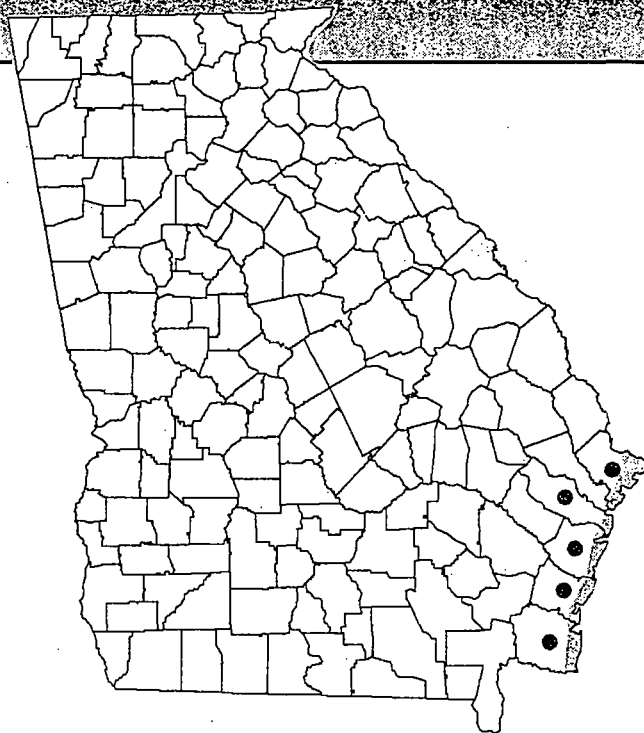
**Other Commonly Used Name(s):** Marsh tern, Egyptian tern, Nile tern

**Description:** The gull-billed tern is a stocky, medium-sized tern 33-38 cm (13-15 in) in length with black legs and feet. The feathers of the body are white, the wings are light gray above, and during summer the head has a black cap that extends from the bill down the back of the neck. In winter, the gull-billed tern lacks the black cap, and the feathers of the head are white except for a small black spot behind the eye. The bird's distinguishing feature is its thick, gull-like black bill. Immature sandwich terns also have black bills, but the bill appears much thinner than that of the gull-billed tern. The gull-billed tern has a heavier body, shorter tail, and slower wing beats than the sandwich tern. Juvenile plumage resembles winter adult plumage, but the head appears off-white and the dark patch behind the eye is indistinct. The feathers of the back are darker gray and may contain dark V-shaped marks.

**Range and Habitat:** The gull-billed tern has a world-wide distribution, breeding at locations in Europe, Asia, northwestern Africa, Australia and North America. In North America, the gull-billed tern breeds at scattered localities along the Atlantic Coast from New Jersey to Florida, across the coast of the Gulf of Mexico to Texas and south into Mexico.

On the western coast, this species breeds locally in southern California at San Diego Bay and the Salton Sea and south along the Mexican coast of the Gulf of California. In winter, gull-billed terns have been recorded as far north as North Carolina, but the normal winter range includes southwestern Florida, the Gulf Coast, Central America, and South America. The species occurs in winter along the Atlantic coast of Brazil, Uruguay, and northern Argentina, and on the Pacific coast from Colombia to Ecuador and Peru.

**Diet:** Terrestrial and aquatic animals; primarily insects, lizards, crustaceans, small fishes, and the chicks of other tern species (including the least tern).



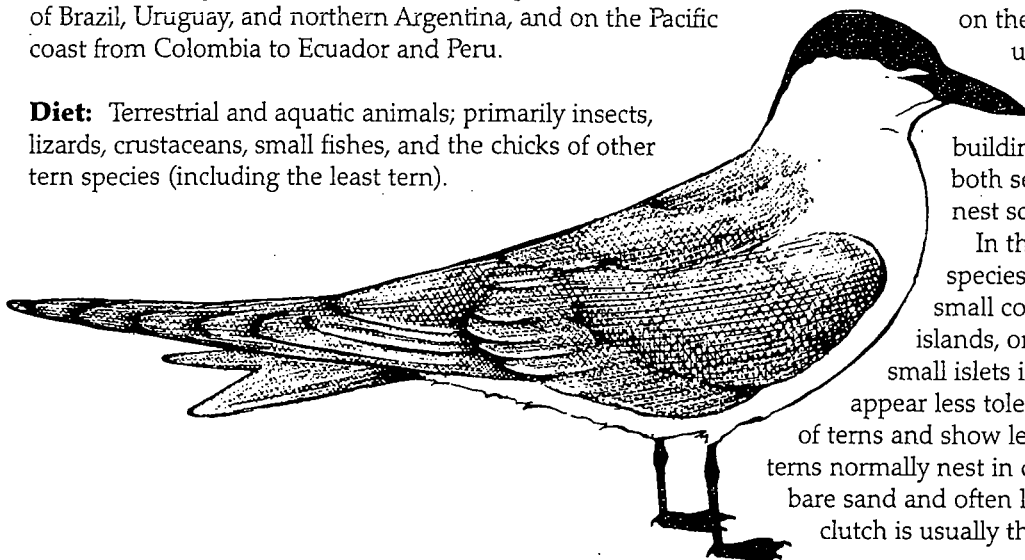
*Shading indicates range*

*Dots indicate counties with known nesting colonies*

**Life History:** Gull-billed terns are agile flyers and forage for insects over salt marshes and beaches using a "hawking" technique. Small prey may be eaten in flight. Terrestrial prey are picked up from the surface by flying terns at the bottom of a steep dive. Gull-billed terns take fish from the water's surface, but, unlike many other terns, rarely dive below the surface for fish. Their feeding over marshes on a wider variety of prey than is taken by other tern species has earned them the common name "marsh tern." This tern is also known to steal fish from other tern species.

Gull-billed terns normally arrive on the breeding grounds in North America in April. The species is monogamous and may form pair bonds prior to arrival on the breeding grounds. Pairs are seen regularly in migration. Gull-billed terns exhibit a variety of courtship displays and mate-guarding behavior. Nest building occurs 5-25 days after arrival, with both sexes participating in construction of the nest scrape.

In the U.S., with rare exceptions, this species breeds along the coast, nesting in small colonies on sandy beaches of barrier islands, on shell banks of coastal lagoons, or on small islets in the Salton Sea. Gull-billed terns appear less tolerant of disturbance than other species of terns and show less fidelity to nesting sites. In Georgia, terns normally nest in depressions or cups they scrape out in bare sand and often line with shells or dead vegetation. The clutch is usually three eggs which are laid within six days;



eggs are grayish or greenish buff with brown spots. The male and female share incubation, which takes about 22-23 days. This species usually lays only one brood per season, but birds may attempt to renest if the first clutch is destroyed. The chicks of the gull-billed tern hatch with downy feathers and open eyes, and are mobile (precocial). Chicks often leave the nest when less than five days old to hide in the nearest vegetation. Both parents contribute to the brooding and feeding of the young. First flight occurs at 28-35 days of age, but young remain dependent upon adults into migration. Gull-billed terns begin breeding at 5 years of age. The maximum longevity in the wild for a gull-billed tern in Europe is 15 years, 10 months; and in the U.S. is 13 years, 11 months.

Barrier island nesting sites are often near inlets, on highly dynamic areas subject to occasional washing by high tides and storm waves. Gull-billed terns often share colonies with other birds, especially the black skimmer. The colony size is variable but usually contains only 20-50 nests. In Louisiana, a few colonies have been documented nesting on gravel rooftops, along with least terns.

**Threats/Comments:** In the late 1800s and early 1900s, many gull-billed terns were killed for their feathers, which were used to decorate women's hats. Through conservation and public education efforts of many organizations, laws were passed to prevent killing of herons, egrets, and terns. By World War I, the wanton killing of birds to decorate hats had ended; however, gull-billed tern populations along the Atlantic coast of the U.S. were greatly reduced in some areas.

Today, gull-billed terns are not abundant anywhere in North America. A 1984 census along the southeast Atlantic and Gulf of Mexico coasts produced a count of 3,019 pairs of gull-billed terns. In 1988, the entire U.S. population, excluding California, was estimated at 5,400 birds. Good data on which to base population trends are lacking for the U.S. and for worldwide populations.

In Georgia, few data are available on the historical abundance of gull-billed terns. A survey of beach nesting birds in 1979 and 1980, located only one colony of 20 pairs of gull-billed terns. In 1987, a small colony (25-30 adults and seven nests) of gull-billed terns was located on Ossabaw Island, Chatham County. In 1993, a mixed species colony of terns was located along the central Georgia coast. Surveys of that site in 1995 and 1996 documented about 80-100 pairs of gull-billed terns. Currently, this is the only colony of this species in Georgia.

Comprehensive surveys in North Carolina, South Carolina, and Georgia in 1993, 1995, and in South Carolina and Georgia in 1996 located about 500 nests at fewer than 20 colonies.

**Conservation and Management:** The gull-billed tern is a species in need of management and protection. It is listed as threatened in Maryland, Virginia, and Georgia. Nest disturbance and loss of habitat to beach-front development are major threats for the gull-billed tern and other colonial beach

nesting birds. Gull-billed terns often nest with black skimmers on highly dynamic spits or small islands near inlets. These areas are often subject to human recreational use leading to disturbance of colonies. Contaminants may present a problem in areas where birds feed over agricultural fields.

Efforts are underway to protect shorebird nesting sites in Georgia from human disturbance. This is the greatest management challenge for conservation of this species in Georgia. Periodic surveys should be continued to monitor the population and the effectiveness of management measures.

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Written by Michael J. Harris

# LOGGERHEAD SEA TURTLE

*Caretta caretta*

**State Status:** Threatened

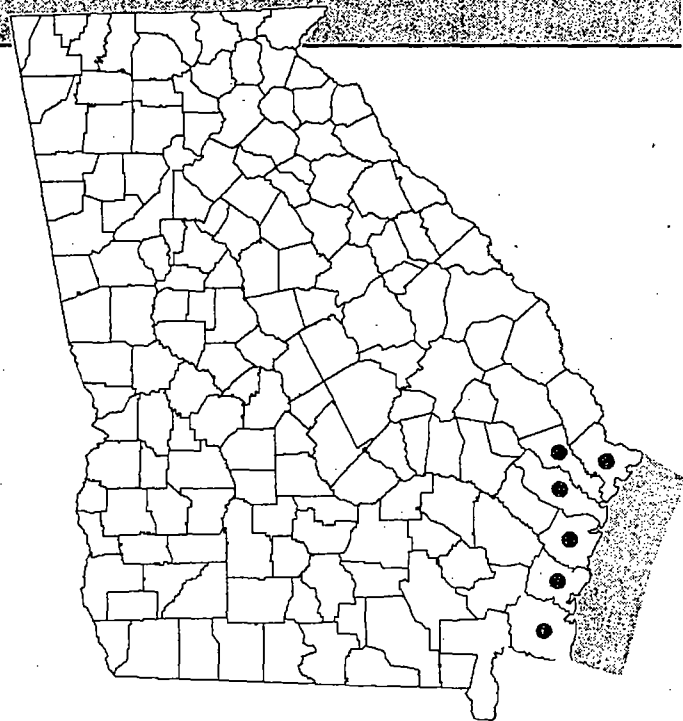
**Federal Status:** Threatened

**Other Commonly Used Name(s):** Loggerhead

**Description:** Adult loggerhead sea turtles have a carapace length of 80-110 cm (31-43 in) and weight of 75-150 kg (165-330 lbs). Scutes cover the carapace and plastron. The carapace, head, and flippers of young adults are usually reddish-brown to brown in color, a helpful key in distinguishing them from other marine turtles found in Georgia. However, the carapaces of older individuals can become covered in algae, barnacles, and a variety of other organisms, hiding the shell under a greenish or gray covering. The plastron base is usually cream or yellow but can become stained to a light brown. The skin of loggerheads is generally cream or yellow. The head is proportionally larger to body size than other turtles, another important field mark in distinguishing loggerheads from other marine turtles.

**Range and Habitat:** Loggerheads are found in the Atlantic, Pacific, and Indian oceans, as well as the Mediterranean. In early life stages, from hatchlings to 10-12 years of age, loggerheads are believed to maintain a pelagic existence, living in association with rafts of sargassum weed and drifting with the main oceanic currents. Habitat use by loggerheads on the Georgia coast is poorly understood. Loggerheads are found throughout the marine and estuarine waters of Georgia during the warm months of spring, summer, and fall. They have been observed swimming or basking on the surface as far as the Gulf Stream, 104 km (62.4 mi) offshore, and are seen regularly as close as the creeks and tidal rivers of Georgia's extensive saltmarshes.

Loggerheads are Georgia's primary nesting sea turtle, laying eggs on the beaches of every barrier island during the summer nesting season.



*Shading indicates range*

*Dots indicate counties with known occurrences (strandings)*

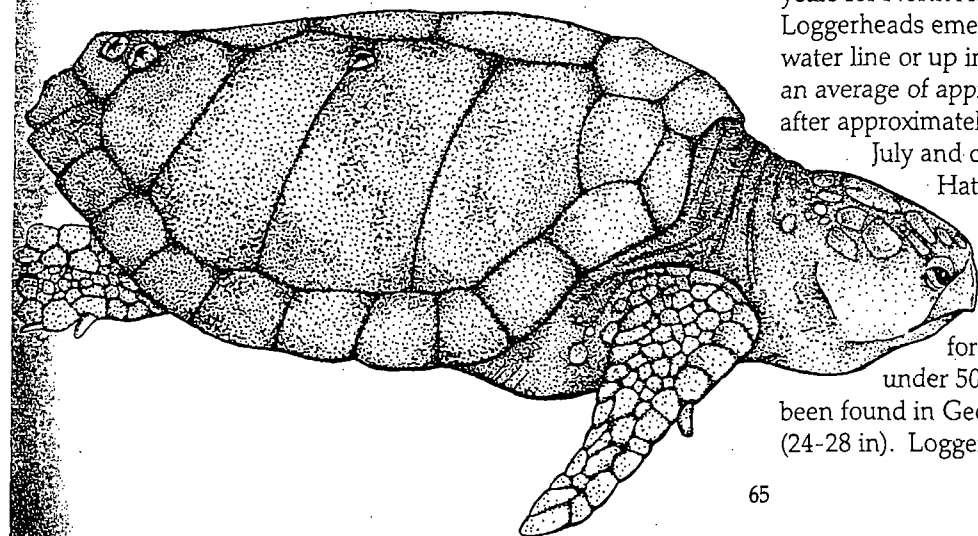
The loggerheads that breed here have been identified genetically as part of a distinct breeding cohort that includes the turtles that nest in North Carolina, South Carolina, and North Florida south to Cape Canaveral.

**Diet:** A wide variety of organisms from sponges to fish, including whelks, moon snails, blue crabs, spider crabs and calico crabs. Hatchlings & juveniles consume insects and other small, marine invertebrates.

**Life History:** Nesting begins in early May and continues through mid-August in Georgia. When they nest for the first time, female loggerheads are usually at least 90 cm (35 in) curved carapace length and average about 100 cm (39 in). Age at first nesting is thought to be somewhere between 20 and 30 years for North Atlantic loggerheads. Longevity is not known. Loggerheads emerge at night, digging nests above the high water line or up into the dune face. They lay 50-170 eggs, with an average of approximately 120 per nest. Hatching occurs after approximately 60 days of incubation, beginning in mid-July and continuing through early October.

Hatchlings leave the nests at night and crawl to the ocean. Female loggerheads do not generally nest every year but return to nest during every second or third season.

Individuals average four nesting attempts for each season they nest. Few loggerheads under 50 cm (20 in) curved carapace length have been found in Georgia; more than 40 percent are 60-70 cm (24-28 in). Loggerheads in this size range are thought to have



left the pelagic existence and settled into a coastal bottom-feeding existence.

**Threats/Comments:** Mortality of loggerheads attributed to human interaction primarily impacts adults and large juveniles. Commercial fisheries, particularly shrimp trawling, have been identified as the most significant cause of mortality for post-pelagic loggerheads. It is estimated that shrimp trawling killed an estimated 5,000-50,000 loggerheads annually in southeastern U.S. coastal waters before turtle excluder devices (TEDs) became mandatory year-round in 1992. Since Georgia DNR began keeping records of turtle strandings in 1980, more than 3,500 dead or dying loggerheads have been documented on the coast. Boat strikes were indicated in 15 percent of the turtle mortalities in 1996.

Natural predation on eggs and hatchlings can be very high (approaching 100 percent) on some beaches that lack nest protection programs. In Georgia, raccoons and ghost crabs can destroy entire loggerhead nests by direct consumption or by opening a nest cavity and exposing eggs to secondary predation or septic conditions. Prior to intense management efforts, feral hogs on Ossabaw, St. Catherines, Little Cumberland, and Cumberland islands have historically had devastating effects on the reproductive success of loggerheads on those islands.

#### **Conservation and Management Recommendations:**

The Nongame-Endangered Wildlife Program coordinates two coast-wide programs for the conservation of sea turtles. The nesting program is a cooperative effort between the Georgia DNR, federal coastal management entities including the U.S. Fish and Wildlife Service and National Park Service, as well as private foundations. The program is directed at maximizing the reproductive success of loggerheads by ensuring that the highest number of hatchlings reaches the ocean every season. Dawn beach surveys of 12 of Georgia's 14 barrier islands record the nests and non-nesting crawls of loggerheads from the previous night's activity. These nest patrols are run during loggerhead nesting season from mid-May through mid-August. Nests are protected from raccoon predation by wire screening and are monitored closely throughout the 60-day incubation period; feral hogs are controlled by trapping and shooting. Hatching success is determined by examining nest contents after the hatchlings have emerged and gone to the ocean.

The Georgia Sea Turtle Stranding and Salvage Network is a coast-wide program in cooperation with the National Marine Fisheries Service (NMFS) and includes many of the same individuals and organizations that monitor loggerhead nesting, as well as volunteers. Dead or stranded live turtles are reported to the Nongame Program immediately after they are discovered on the beach. Initial external examinations are made to record any signs of trauma that may have contributed to the turtle's death. Approximately 50 percent of the stranded turtles are examined internally by necropsy to assess the general health of the animal. Trends in sea turtle

mortality are documented and reported to the national sea turtle stranding coordinator at NMFS. Cumulative state stranding reports help NMFS determine management needs regionally and nationally.

Loggerhead nesting activity has not increased significantly over the last 10 years (1989-1998) in Georgia. Annual nest numbers vary widely including an all-time low in 1993 of just 475 nests to 1,375 nests a year later in 1994. Trends in loggerhead nesting effort are currently the best estimate of the Georgia population of that species, and there are no signs that the turtles are recovering. Efforts in loggerhead conservation must be long-term endeavors and include all of the species' life stages.

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*Written by Bradford Winn*

# GREEN SEA TURTLE

*Chelonia mydas*

**State Status:** Threatened

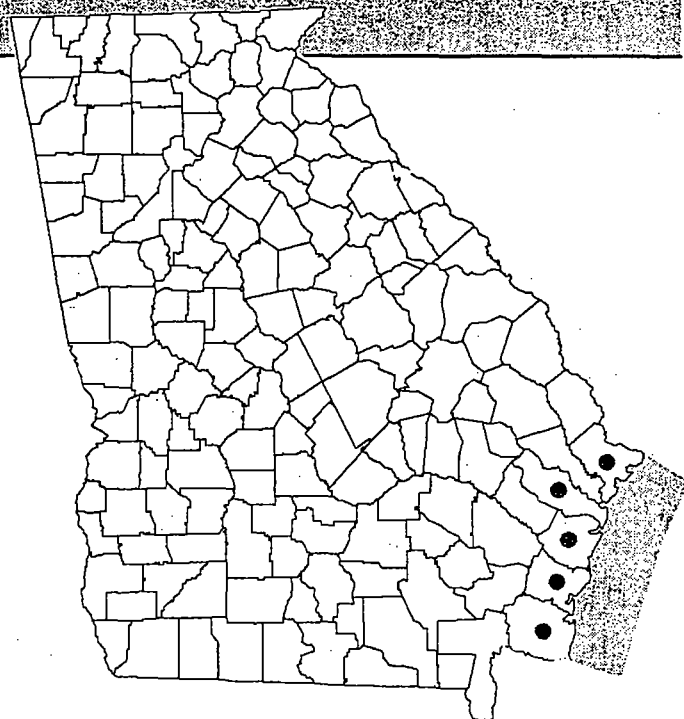
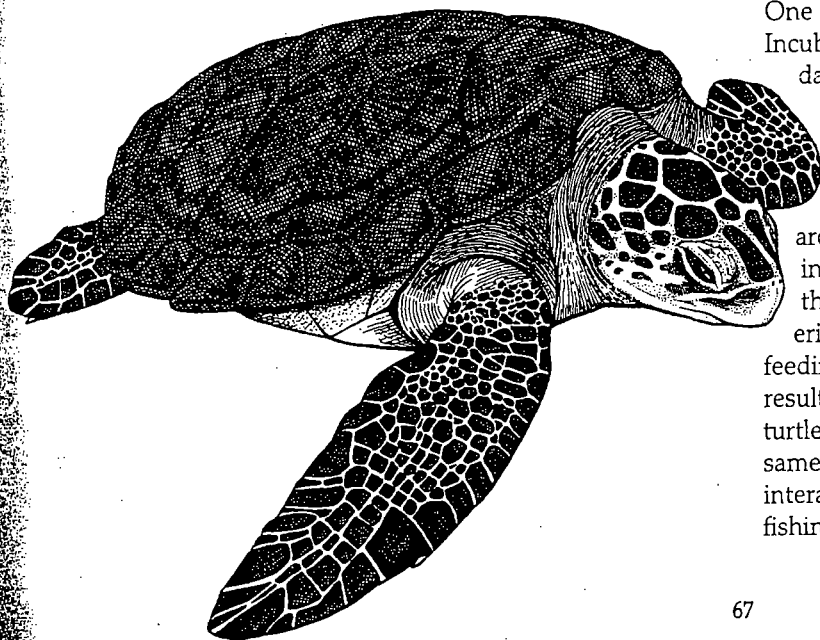
**Federal Status:** U.S. nesting population endangered; threatened elsewhere

**Other Commonly Used Name(s):** Green turtle

**Description:** Adult green turtles have a carapace length of 90-122 cm (35-48 in). The carapace is usually heart-shaped, flat, broad and smooth, and the head is proportionally smaller than loggerheads, ridleys, or leatherbacks. Although the plastron is white or yellow, the overall carapace color is brown or olive with radiating rays of yellow or cream evident, especially in younger turtles. Skin color can vary from white to black with intermediate shades of brown and grey, and the distinct head scales are frequently bordered by yellow. Interestingly, the common name of this turtle comes from the color of its fat.

**Range and Habitat:** Green turtles can be found primarily in the tropical zones of the Atlantic, Pacific, and Indian oceans, although they stray into more temperate regions of those oceans. The serrated mandible is used to feed on algae and grasses in shallow, well lighted flats and coral reefs. In Georgia, habitat use by green turtles is poorly understood. Live juvenile green turtles are occasionally caught and tagged in trammel nets used by DNR fisheries biologists on the west side of St. Simons and Jekyll islands. Of 4,437 turtles found dead on the Georgia coast between 1980 and 1998, 38 were green turtles. The smallest measured green turtle was 22.5 cm (9 in) in curved carapace length; the largest was 87 cm (34 in), with an average of 43 cm (17 in).

**Diet:** Primarily grasses and algae in shallow water (adults); juveniles are more carnivorous.



*Shading indicates range*

*Dots indicate counties with known occurrences (strandings)*

Georgia's estuaries and coastal waters lack the submerged aquatic vegetation favored by adult green turtles for food. Feeding habits in Georgia waters are not well documented.

**Life History:** Green turtles apparently grow slowly compared to the growth rates of either loggerheads or hawksbills; the average size of nesting green turtles in the Atlantic is over 100 cm (39 in) carapace length. These turtles are thought to be at least 19 years old before they nest for the first time, with nesting occurring every 1-5 years. Nesting in Georgia is very rare but has been recorded. Clutches of green turtle eggs usually number between 100-120 but can be as large as 238 eggs. One to seven nests are laid during a nesting season. Incubation can vary between 30-90 days but averages 50-55 days.

**Threats/Comments:** The greatest threats to green turtles, both historical and current, are human-related. The eggs and meat of green turtles are in demand around the world, particularly in protein-starved developing countries. Green turtles as well as other marine life are threatened by open-ocean drift-netting, and long-line fisheries. Degradation of marine environments that include the feeding and reproductive habitats of green turtles also has resulted in a severe decline in historical populations. Green turtles in Georgia waters are most likely susceptible to the same hazards as other species, including trawling fishery interactions, collision with recreational and commercial boats, fishing line entanglements, and occasional malicious acts.

### **Conservation and Management Recommendations:**

Green turtles are subjects of research projects throughout the globe, with a primary focus being green turtle population conservation needs. Redirecting the demand on green turtle eggs and meat by impoverished peoples to alternative sources of protein and income will be important for the long-term recovery of green turtle populations. Reducing ocean trash and banning the use of long-line fisheries and drift gillnet fisheries will benefit not only green turtles but all marine life. The use of turtle excluder devices, combined with efforts to boost reproductive success of green turtles by protecting nests from depredation, may alleviate enough stress to allow depleted populations to recover.

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Written by Bradford Winn

# LEATHERBACK SEA TURTLE

*Dermochelys coriacea*

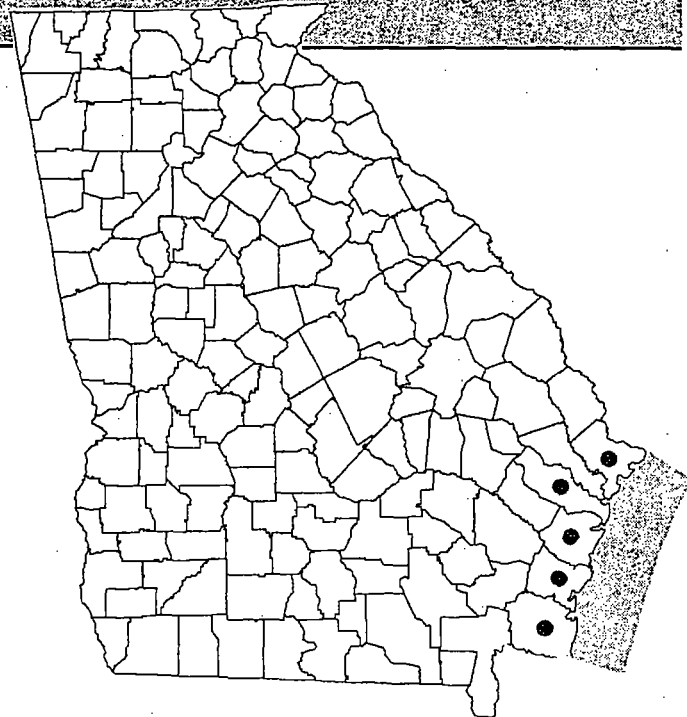
**State Status:** Endangered

**Federal Status:** Endangered

**Other Commonly Used Name(s):** Leatherback

**Description:** Adult leatherbacks are the largest turtles in the world, weighing an average of 300- 550 kg (660-1210 lbs) and measuring 135-175 cm (53-69 in). These turtles are generally black in appearance, with some gray and white spots ("vermiculations") on the ventral side of the body and dorsal surface of the flippers. The 110 leatherbacks that have washed up dead on Georgia's beaches since 1982 have ranged in size from 25-188 cm (10-74 in) curved carapace length, with an average of 151 cm (60 in). Unlike other sea turtles, leatherbacks do not have large scutes covering the carapace and plastron; instead, they have a layer of skin over a very flexible shell. The carapace has seven, raised longitudinal ridges. The most distinguishing morphological characteristics of leatherbacks are their large size and dark color. Two large cusps on the upper jaw can be seen on close examination and are also distinctive. While swimming at the surface and breathing, the leatherback often holds its entire head out of the water, and the dorsal surface of its back usually breaks the surface as well.

**Range and Habitat:** Leatherbacks are highly pelagic with a global distribution, perhaps more widely distributed than any other reptile on earth. Found throughout the Atlantic, Pacific, and Indian oceans, these turtles can tolerate cool northern hemisphere ocean temperatures, allowing them regularly to move farther north than other sea turtles. They have been found swimming in sub-Arctic regions, a reflection of their apparent ability to maintain core body temperatures that are



*Shading indicates range*

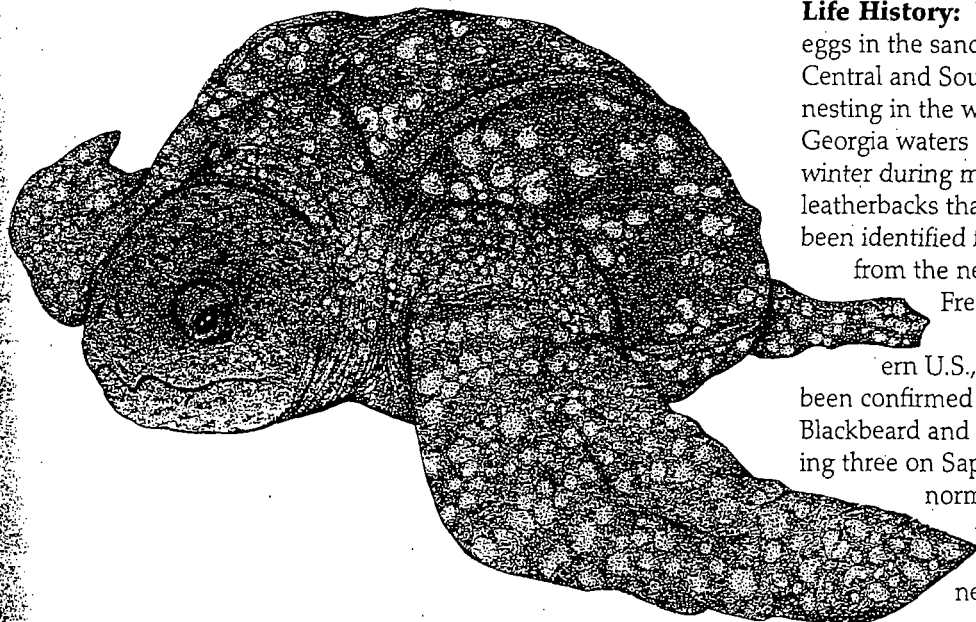
*Dots indicate counties with known occurrences (strandings)*

higher than surrounding ambient ocean temperatures. Even though they are ocean wanderers, leatherbacks regularly approach the shore. They have been seen close to Georgia's barrier beaches and have even been observed swimming in the sounds and estuaries near Wassaw, Ossabaw, and St. Catherines islands.

**Diet:** Primarily jellyfish, but occasionally other marine invertebrates like octopi and squid. Georgia turtles have been found engorged with cannonball jellyfish.

**Life History:** Leatherbacks, like other sea turtles, deposit eggs in the sand of warm tropical and subtropical beaches. Central and South American beaches support the majority of nesting in the western Atlantic. Leatherbacks are found in Georgia waters primarily in the early spring, fall, and early winter during migration to and from the tropics. Dead leatherbacks that have been found on Georgia's beaches have been identified from tags and genetic samples as originating from the nesting beaches of St. Croix, Trinidad, and French Guiana.

Leatherbacks nest regularly in the southeastern U.S., particularly Florida. Only five nests have been confirmed in Georgia, two of which were laid on Blackbeard and Cumberland islands in 1981 and the remaining three on Sapelo and Sea islands in 1996. Leatherbacks normally nest about six times in a season but have been known to nest as many as eleven times. Like other sea turtles, leatherbacks do not nest every year but normally return to nest every



2-4 years. The 80- 90 billiard-ball sized white eggs normally hatch in about 50-78 days.

Very little is known about leatherbacks during any of their developmental life stages, and virtually nothing is known of the post-hatching and juvenile life-stage periods. Young leatherbacks grow more rapidly than other sea turtles and probably reach maturity at a much earlier age as well. The average age of maturity has been estimated at 13-14 years for females, which is quite rapid compared to the estimated 20-30 years to maturity in loggerheads. Maximum life span is not known.

Leatherbacks are one of the deepest diving air-breathing animals, reaching depths of approximately 1,000 m (3,300 ft). Sperm whales may be able to dive to three times that depth.

**Threats/Comments:** A recent estimate of the world's nesting female population is 34,500 individuals, a mere third of the estimated world population two decades ago. The species appears to be in a world-wide population decline. Directed harvesting of adults and egg poaching probably contributed to this decline. Egg poaching in countries such as Costa Rica is a profit-oriented endeavor, where the eggs are more likely to end up served in bars as supposed aphrodisiacs than served as staple food items. In Malaysia, however, the subsistence harvest pressure on the eggs has caused a complete collapse of what was once one of the largest concentrations of nesting leatherbacks in the world.

An equally insidious threat to leatherbacks and all sea turtles, and one that is very difficult to assess, is incidental mortality due to commercial fishing efforts throughout the oceans. These ocean wanderers are caught on hooks from commercial long-line fisheries, and they become entangled in drift gillnets in the open ocean. An estimated minimum of 1,000 leatherbacks are killed annually in the Pacific as bycatch from commercial fisheries. In many parts of the world, including Georgia, leatherbacks drown in shrimp trawls. The adult turtles are too large to fit through the turtle excluder devices that were originally designed to allow the much smaller Kemp's ridley and loggerheads to escape from shrimp nets.

#### **Conservation and Management Recommendations:**

Leatherbacks are most likely to wash ashore in Georgia during two periods, March through June and October through December. The temporal distribution of the strandings reflects the periods of greatest abundance in Georgia's nearshore waters. To help alleviate leatherback mortality during the species migration along our coast, the Nongame-Endangered Wildlife Program flies weekly transects covering the entire coast searching for concentrations of leatherbacks. If concentrations of the animals are found, the National Marine Fisheries Service (NMFS) is notified and can implement a leatherback contingency plan to protect them from commercial shrimp fishing until the turtles move through the area.

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Written by Bradford Winn

# GOPHER TORTOISE

*Gopherus polyphemus*

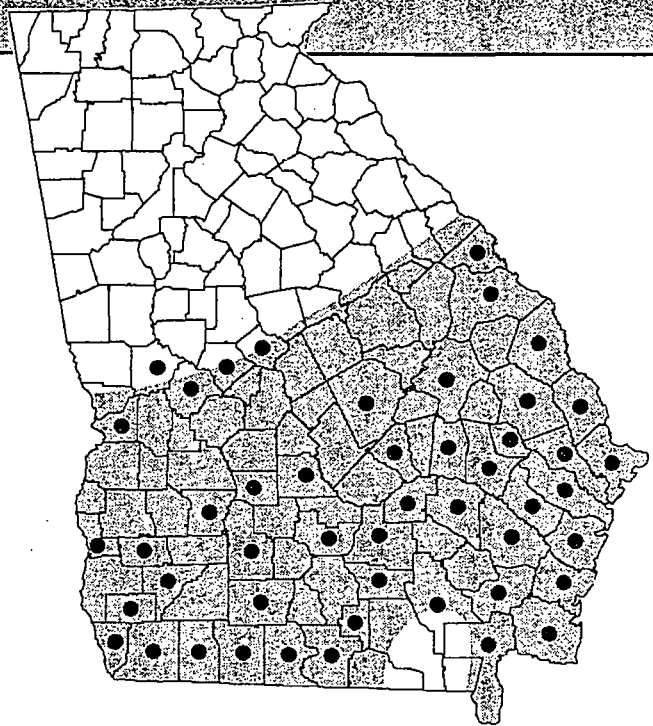
**State Status:** Threatened

**Federal Status:** Threatened west of the Tombigbee and Mobile rivers in Alabama, Mississippi, and Louisiana. Not listed elsewhere.

**Other Commonly Used Name(s):** Gopher

**Description:** The official state reptile of Georgia, the gopher tortoise is a relatively large terrestrial turtle, obtaining a maximum carapace length of 38 cm (15 in), though averaging 23-28 cm (9-11 in). Its oblong carapace is unkeeled and domed, somewhat flattened, and brown or gray in color. Distinctive growth annuli are evident in juveniles and young adults, usually becoming obscured later in life. The yellowish plastron is hingeless and has conspicuous elongated gular scutes. With the exception of the yellowish limb sockets, the scaly skin of adults is typically dark gray. Perhaps the most characteristic features of gopher tortoises are the elephantine hind limbs and the flattened, shovel-like forelimbs. The head is wide and rounded, with a pair of seasonally-swollen mental glands on the chin. Hatchlings have yellowish skin as well as yellow-centered scutes, both of which gradually darken with age. Males have slightly concave plastrons.

**Range and Habitat:** Gopher tortoises occur in the Coastal Plain from southern South Carolina south and westward to extreme eastern Louisiana. Extant or historical localities in Georgia are known throughout the southern half of the state below the Fall Line. They are apparently absent from the Okefenokee Swamp and most barrier islands. Documented specimens collected from St. Simons and Cumberland islands were likely of an introduced origin rather than naturally occurring. In 1994, a large number of tortoises were salvaged from an industrial park development site in Bulloch County and relocated to St. Catherines Island, where successful reproduction has occurred. Tortoises observed or collected from the Piedmont and mountains of Georgia are undoubtedly released animals.



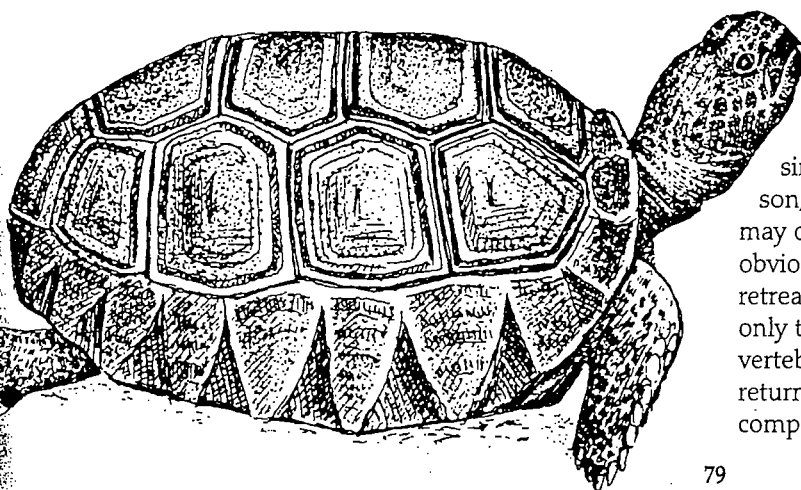
*Shading indicates range*

*Dots indicate counties with known occurrences*

Along with sandy soil for burrowing, sunlight availability and abundant herbaceous vegetation are the key habitat requirements for this reptile. Gopher tortoises are a characteristic species of the rapidly disappearing longleaf pine and wiregrass community, which includes sandhills, flatwoods, and turkey oak scrub. Historically, this community was represented by an open-canopied forest that allowed abundant sunlight penetration and conditions favorable for a rich growth of herbaceous vegetation. Unfortunately, very little of this naturally occurring habitat still exists; therefore, many tortoises have been forced into anthropogenic habitats, such as roadsides and old fields, that retain the three key requirements.

**Diet:** A wide variety of succulent grasses and forbs; fruits, such as those of legumes, are eaten in season.

**Life History:** Gopher tortoises dig unbranched burrows up to, and sometimes greater than, 10 m (33 ft) long. The burrows are excavated wide enough to allow room for the tortoise to turn around at any point and may have an enlarged terminal chamber. A single tortoise may dig more than one burrow each season, and occupancy of a burrow by more than one tortoise may occur. These characteristics make population estimates obviously difficult. Burrows provide winter hibernacula, retreats from the summer heat, and shelter from fire for not only the tortoise, but also for hundreds of invertebrate and vertebrate animal species. Tortoises also benefit plant life by returning leached nutrients to the surface, creating bare, competition-free areas of soil, and by dispersing seeds through



fruit consumption and subsequent defecation elsewhere. For these reasons, the gopher tortoise has been termed the "key-stone species" of the longleaf pine community, meaning its existence is critical to the existence of many other species.

Courtship and mating occur from April through early June. Nesting reaches a peak in early June but may last until mid-July. Females, which may not attain sexual maturity until 19-20 years of age, produce only once clutch each year and usually construct nests in the burrow mounds. An average of six white, nearly spherical eggs are deposited, and hatching follows an incubation period of 97-106 days. Nests and hatchlings are preyed upon by a variety of mammals and snakes, though raccoons are apparently the chief predators at most sites.

**Threats/Comments:** The loss and alteration of the longleaf pine-wiregrass community through agricultural and silvicultural development, urban sprawl, and fire suppression has eliminated many populations and isolated most others. It has been estimated that the average female gopher tortoise in Georgia has an effective rate of reproduction of about 5.8 hatchlings per 10 years, assuming annual egg laying. This naturally low fecundity is only worsened by isolation, unnaturally high populations of raccoons, suboptimal habitat conditions, and other factors. Tortoises forced into roadside habitats due to a lack of suitable surrounding land are obviously more vulnerable to vehicle impacts and collection by humans. In the past, tortoise populations in many areas were heavily decimated by human exploitation for food, a practice now illegal but which may continue in some areas. The introduction of gas-line into the burrows of gopher tortoises is a technique used by some rattlesnake hunters to force the snakes to the surface. This practice is typically fatal to all burrow inhabitants. Upper Respiratory Tract Disease (URTD) is a highly contagious, relatively recently recognized disease present in many populations and is apparently often fatal.

**Conservation and Management Recommendations:** A priority should be placed upon the protection of remaining natural longleaf pine forests, which will not only benefit the gopher tortoise but a suite of rare animals and plants as well. The use of periodic controlled burns should be practiced to reduce hardwood vegetation and promote grasses and forbs. Raccoons may need to be controlled in areas of high human activity, such as State Parks. Until more information is secured concerning the threat of URTD, distant relocations should be discouraged and practiced only as a last resort.

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Written by John B. Jensen

# KEMP'S RIDLEY SEA TURTLE

*Lepidochelys kempii*

**State Status:** Endangered

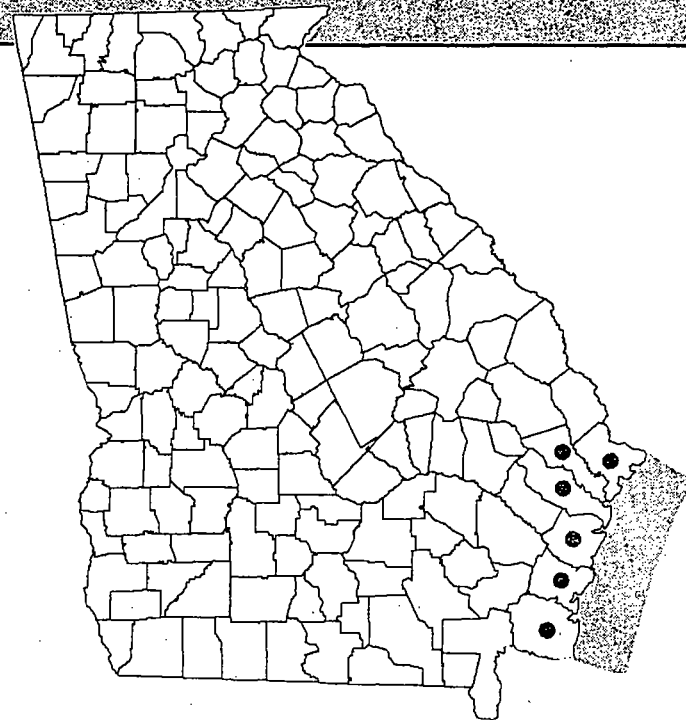
**Federal Status:** Endangered

**Other Commonly Used Name(s):** Kemp's ridley,  
Atlantic ridley

**Description:** Kemp's ridleys are sleek turtles that are smaller as adults than any other sea turtle in the North Atlantic Ocean or Gulf of Mexico. Adult carapace length is 58-70 cm (23-28 in), and average weight is 41 kg (90 lbs). The carapace is relatively flat and round, compared to the high-domed and elongated carapace of the loggerhead. Unlike the loggerhead's reddish brown shell, head, and flipper color, the Kemp's ridley has a gray to grayish-green hue. The color of the ventral surface of the turtle, including the plastron, is cream to white. Ridley heads are fairly large proportionally to body size but not as robust as similarly-sized loggerheads.

**Range and Habitat:** Adult ridleys are found primarily in the Gulf of Mexico, but juveniles have been observed throughout the Atlantic Ocean. The turtles prefer shallow coastal waters. In Georgia, juvenile Kemp's ridleys are prevalent during the months of April through October.

**Diet:** Blue crabs, stone crabs, spider crabs, moon snails, and a number of other animals and plants.



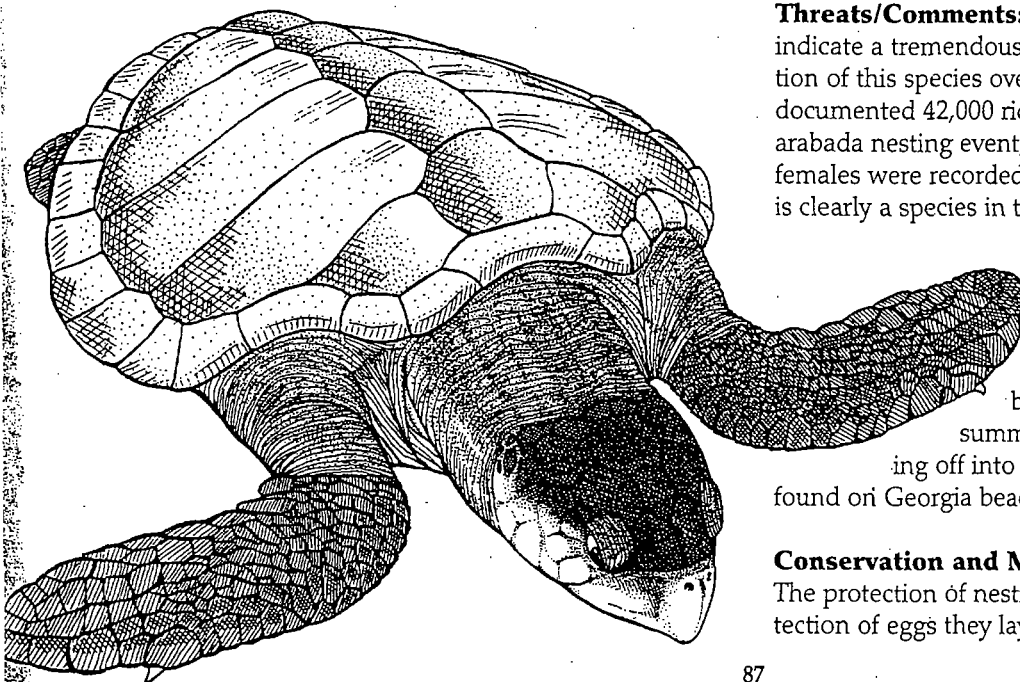
*Shading indicates range  
Dots indicate counties with known occurrences (strandings)*

**Life History:** Kemp's ridleys nest almost exclusively on the beaches of Rancho Nuevo on the Mexican gulf coast. The nesting season runs from April through mid-July, with individual females nesting every 1-3 years, occasionally in the daytime in large groups called arabadas. Clutches range from 51-185 eggs. Eggs hatch after 50-70 days of incubation. Little is known about the general ecology of Kemp's ridley turtles, and virtually nothing is known about free-swimming hatchlings and adult males.

**Threats/Comments:** Nesting records from the late 1940s indicate a tremendous and precipitous decline in the population of this species over a 4-decade period. A late 1940's film documented 42,000 ridleys on the beach in one day during an arabada nesting event; by the 1990 nesting season, only 530 females were recorded nesting during the entire season. This is clearly a species in trouble. However, since 1990 there have been annual incremental increases in nesting efforts at Rancho Nuevo that have brought the number of Kemp's ridley nests up to more than 2,000 in 1997. In Georgia, strandings typically begin in April and continue through the summer, peaking in June and July and tapering off into early November. Very few ridleys are found on Georgia beaches during the winter months.

## **Conservation and Management Recommendations:**

The protection of nesting female Kemp's ridleys and the protection of eggs they lay at Rancho Nuevo in Mexico, combined



with the development and implementation of turtle excluder device regulations, have most likely contributed to a modest but steady increase in the number of nesting females in Mexico. As with other sea turtle species, the best indication of population changes of Kemp's ridleys is the trend in nesting effort. There is optimism that Kemp's ridley conservation efforts are working.

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Written by Bradford Winn

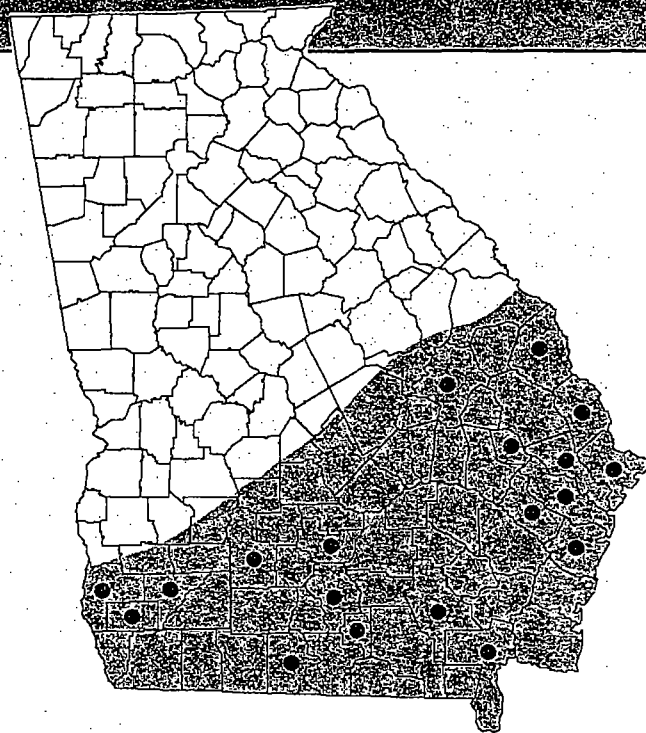
# FLATWOODS SALAMANDER

**State Status:** Threatened  
**Federal Status:** Threatened

**Other Commonly Used Name(s):** None

**Description:** The flatwoods salamander is black to dark brown and typically patterned with light gray or white flecked lines, forming a netlike pattern on the back, sides, head, and tail. Less common "frosted" forms show a more random flecking pattern. Its underside is dark gray or black with small, scattered white or light gray spots. The head is relatively small, but the tail is quite fat. Adults are typically 12-15 cm (4.5-6 in) in total length. The broad-headed, bushy-gilled larva is very distinctive with a prominent light yellow or beige stripe running the length of the otherwise chocolate-brown body. The larva also has a dark brown stripe through each eye, extending from the nostril to the gills.

Adult flatwoods salamanders may be confused with the slimy salamander at first glance; however, the latter species differs in appearance by having unconnected, widely scattered light spots on the back and sides and a groove between each nostril and the upper lip.



*Shading indicates range*  
*Dots indicate counties with known occurrences*

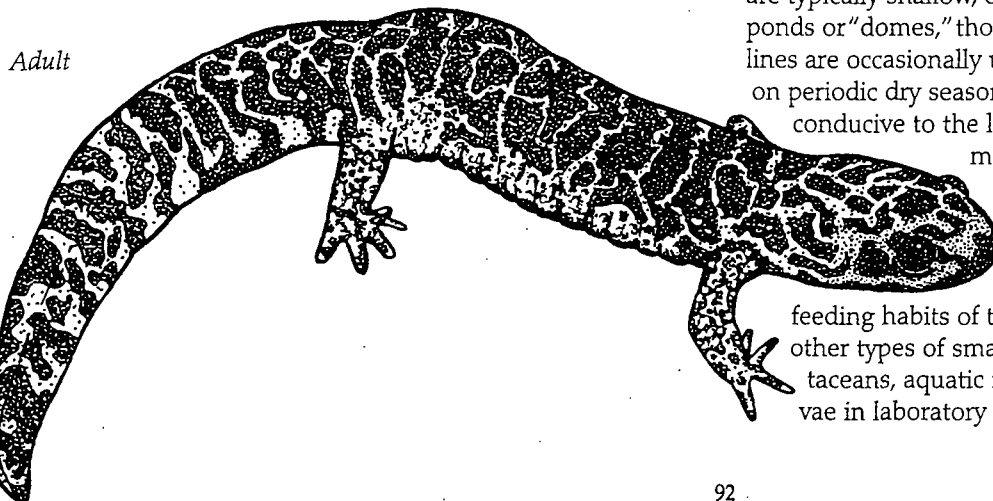
**Range and Habitat:** This species is restricted to the Coastal Plain of South Carolina, Georgia, Florida, and Alabama. Despite relatively widespread historic sites in southern Georgia, extant populations are known from only Baker, Bryan, Evans, Liberty, McIntosh and Miller counties.

This salamander is endemic to mesic flatwoods habitats within the vanishing longleaf pine wiregrass community. Slash pine was incorrectly reported in early species accounts as a commonly associated tree species within its non-breeding habitat. Nearly all flatwoods salamander sites currently dominated by slash pine have been converted from historic longleaf stands. Pine flatwoods are fire-dependent communities, requiring periodic burns to promote grasses and forbs, while limiting shrubs and hardwoods. Breeding sites are typically shallow, ephemeral cypress and/or swamp tupelo ponds or "domes," though flooded roadside ditches and fire lines are occasionally used. Breeding sites are also dependent on periodic dry season fires, which maintain an open canopy conducive to the luxuriant growth of emergent and submergent grasses, sedges, and forbs necessary for sheltering the aquatic larvae.

**Diet:** Very little is known about the feeding habits of this species. Earthworms, likely many other types of small terrestrial invertebrates (adults); crustaceans, aquatic insects and small tadpoles (eaten by larvae in laboratory conditions).



Larva



Adult

**Life History:** As adults, flatwoods salamanders are primarily fossorial, living in burrows just below the soil surface.

Triggered by rain-laden cold fronts during the fall and early winter breeding season, mature salamanders nocturnally migrate to isolated wetlands *en masse*. Movements of more than 1.6 km (1 mi) from a breeding site to a terrestrial retreat have been reported. Following mating, female flatwoods salamanders deposit up to 225 eggs singly or in small groups in the dry portions of the pond basin or in grassy areas at the pond margin, usually under leaf litter or logs, at the bases of grass clumps, or at the entrance of crayfish burrows. In most years, repeated rain events eventually fill the wetland and inundate the developing eggs, inducing hatching. However, in some years insufficient rainfall following egg deposition prevents complete inundation, resulting in few eggs hatching and low recruitment. Larvae are primarily inactive during the day but will emerge from the sheltering vegetation at night to feed in the water column. A developmental period of 11-18 weeks follows hatching, and larvae typically metamorphose in March or April.

**Threats/Comments:** Of the 97 range-wide historical sites revisited in a 7-year period since 1990, only 12 localities were found to still contain flatwoods salamanders. In Georgia, extant populations are known from only four sites: Ft. Stewart Military Reservation, J.W. Jones Ecological Research Center, Townsend Bombing Range, and Mayhaw Wildlife Management Area. Any species with such a reduced range is vulnerable to extirpation. Habitat loss has been the primary cause of this salamander's demise throughout its range. Agriculture and silviculture have eliminated the vast majority of the once widespread longleaf pine flatwoods community in Georgia and elsewhere. Because pine flatwoods are typically underlain by semi-hydric soils, forestry practices often involve altering the hydrology by ditching, draining, and/or bedding. These activities are detrimental to both the fossorial and aquatic existence of this species and may interfere with successful migration. Ditching and draining isolated wetlands used by breeding flatwoods salamanders significantly shortens their hydroperiod, halting larval development prior to metamorphosis. Fire suppression throughout the Coastal Plain has also reduced the amount of suitable habitat.

#### **Conservation and Management Recommendations**

With extremely few healthy populations of flatwoods salamanders in Georgia, forest management plans in these areas should consider the conservation of this species a top priority. Avoidance of mechanical disturbance to the soil and discontinuing practices which may result in adverse hydrological impacts to breeding sites are critical, especially within at least a 1.6 km (1 mi) radius from the edge of all known breeding wetlands. Periodic lightning-season burns should be prescribed in pinelands inhabited by flatwoods salamanders, and these fires allowed to burn into isolated wetlands. Annual monitoring of known breeding sites is strongly encouraged.

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Written by John B. Jensen

Releasable P. Anderson  
2/24/04 Date

**PROJECT NOTE**

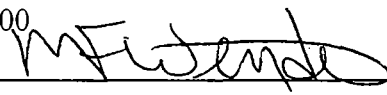
Date: July 24, 2001

Project Number: 9007.011006

Name: M.F. Wendt

Time: 0800

Title: Information Specialist

Signature: 

Subject: Population within distance rings for Latex Construction Company, Thunderbolt, Georgia

The population within a 4-mile radius of the Latex Construction Company, Thunderbolt, Georgia facility was obtained from the U.S. Department of Commerce, LandView IV Environmental Mapping Software which is based on the Bureau of the Census 1990 population data. The population is provided for each radius, from 0.25-mile to 4-miles. The population within the 0.25-mile distance ring was lifted from the LandView printout. The population within the other distance categories were obtained as follows:

- For the 0.25- to 0.50-mile distance ring, the population within 0.25 mile was subtracted from the population within 0.50 mile.
- For the 0.50- to 1-mile distance ring, the population within 0.50 mile was subtracted from the population within 1 mile.
- For the 1- to 2-mile distance ring, the population within 1 mile was subtracted from the population within 2 miles.
- For the 2- to 3-mile distance ring, the population within 2 miles was subtracted from the population within 3 miles.
- For the 3- to 4-mile distance ring, the population within 3 miles was subtracted from the population within 4 miles.

Population within Distance Rings	
Distance Ring: (miles)	Population: (number of persons)
0.00 - 0.25	64
0.25 - 0.50	1,251
0.50 - 1.0	1,461
1.0 - 2.0	15,947
2.0 - 3.0	29,713
3.0 - 4.0	34,359

**RESPONSE REQUIRED**

( ) None ( ) Phone call ( ) Memo ( ) Letter ( ) Report

Attach population data from LandView

# LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.  
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.  
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg	min	sec	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="1"/>	<input type="text" value="23"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.023278"/>
Longitude	<input type="text" value="81"/>	<input type="text" value="2"/>	<input type="text" value="52"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="81.048000"/>



Main Menu

Enter Radius  miles

Calculate  
Population

Clear all fields

Refresh Lat/Long  
from MARPLOT

Print this screen

Show this radius  
on map

Note: Population Statistics are not available for Virgin Islands, Guam, American Samoa, and N. Mariana Islands.  
Race statistics are not available for Puerto Rico.

Results			
Total population:	<input type="text" value="64"/>	White:	<input type="text" value="62"/>
Housing units:	<input type="text" value="27"/>	Black:	<input type="text" value="0"/>
Census Block count:	<input type="text" value="4"/>	Indian:	<input type="text" value="2"/>
Area within radius (sq. mi.):	<input type="text" value="0.196"/>	Asian:	<input type="text" value="0"/>
		Hispanic:	<input type="text" value="0"/>

# LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.  
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.  
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg	min	sec	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="1"/>	<input type="text" value="23"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.023278"/>
Longitude	<input type="text" value="81"/>	<input type="text" value="2"/>	<input type="text" value="52"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="81.048000"/>



Main Menu

Enter Radius  miles

Calculate  
Population

Clear all fields

Refresh Lat/Long  
from MARPLOT

Print this screen

Show this radius  
on map

Note: Population Statistics are not available for Virgin Islands, Guam, American Samoa, and N. Mariana Islands.  
Race statistics are not available for Puerto Rico.

## Results

Total population:	<input type="text" value="1315"/>	White:	<input type="text" value="276"/>
Housing units:	<input type="text" value="183"/>	Black:	<input type="text" value="1028"/>
Census Block count:	<input type="text" value="17"/>	Indian:	<input type="text" value="7"/>
Area within radius (sq. mi.):	<input type="text" value="0.785"/>	Asian:	<input type="text" value="2"/>
		Hispanic:	<input type="text" value="1"/>

# LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.  
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.  
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg	min	sec	hemisphere	decimal degrees
Latitude	32	1	23	<input checked="" type="radio"/> North <input type="radio"/> South	32.023278



Main Menu

Longitude	81	2	52	<input checked="" type="radio"/> West <input type="radio"/> East	81.048000
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Enter Radius 1 miles

Calculate  
Population

Clear all fields

Refresh Lat/Long  
from MARPLOT

Print this screen

Show this radius  
on map

Note: Population Statistics are not available for Virgin Islands, Guam, American Samoa, and N. Mariana Islands.  
Race Statistics are not available for Puerto Rico.

Results			
Total population:	2776	White:	1126
Housing units:	837	Black:	1615
Census Block count:	52	Indian:	10
Area within radius (Sq. mi.):	3.142	Asian:	23
		Hispanic:	10

# LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.  
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.  
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg.	min.	sec.	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="1"/>	<input type="text" value="23"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.023278"/>
Longitude	<input type="text" value="81"/>	<input type="text" value="2"/>	<input type="text" value="52"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="81.048000"/>



Main Menu

Enter Radius  miles

Calculate  
Population

Clear all fields

Refresh Lat/Long  
from MARPLOT

Print this screen

Show this radius  
on map

Note: Population Statistics are not available for Virgin Islands, Guam, American Samoa, and N. Mariana Islands.  
Race statistics are not available for Puerto Rico.

Results			
Total population	<input type="text" value="18723"/>	White	<input type="text" value="11467"/>
Housing units	<input type="text" value="7035"/>	Black	<input type="text" value="6970"/>
Census Block count	<input type="text" value="291"/>	Indian	<input type="text" value="45"/>
Area within radius (sq. mi.)	<input type="text" value="12.566"/>	Asian	<input type="text" value="197"/>
		Hispanic	<input type="text" value="162"/>

# LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.  
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.  
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg.	min.	sec.	hemisphere	decimal degrees
Latitude:	<input type="text" value="32"/>	<input type="text" value="1"/>	<input type="text" value="23"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.023278"/>
Longitude:	<input type="text" value="81"/>	<input type="text" value="2"/>	<input type="text" value="52"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="81.048000"/>



Main Menu

Enter Radius  miles

Calculate  
Population

Clear all fields

Refresh Lat/Long  
from MARPLOT

Print this screen

Show this radius  
on map

Note: Population Statistics are not available for Virgin Islands, Guam, American Samoa, and N. Mariana Islands.  
Race statistics are not available for Puerto Rico.

Results			
Total population:	<input type="text" value="48436"/>	White:	<input type="text" value="27705"/>
Housing units:	<input type="text" value="19361"/>	Black:	<input type="text" value="19889"/>
Census Block count:	<input type="text" value="856"/>	Indian:	<input type="text" value="81"/>
Area within radius (sq. mi.):	<input type="text" value="28.274"/>	Asian:	<input type="text" value="644"/>
		Hispanic:	<input type="text" value="383"/>

# LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.  
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.  
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg	min	sec	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="1"/>	<input type="text" value="23"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.023278"/>
Longitude	<input type="text" value="81"/>	<input type="text" value="2"/>	<input type="text" value="52"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="81.048000"/>



Main Menu

Enter Radius  miles

Calculate  
Population

Clear all fields

Refresh Lat/Long  
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on map

Note: Population Statistics are not available for Virgin Islands, Guam, American Samoa, and N. Mariana Islands.  
Race statistics are not available for Puerto Rico.

## Results

Total population	<input type="text" value="82795"/>	White	<input type="text" value="44553"/>
Housing units	<input type="text" value="34985"/>	Black	<input type="text" value="37019"/>
Census Block count	<input type="text" value="1609"/>	Indian	<input type="text" value="138"/>
Area within radius (sq. mi.)	<input type="text" value="50.265"/>	Asian	<input type="text" value="899"/>
		Hispanic	<input type="text" value="650"/>